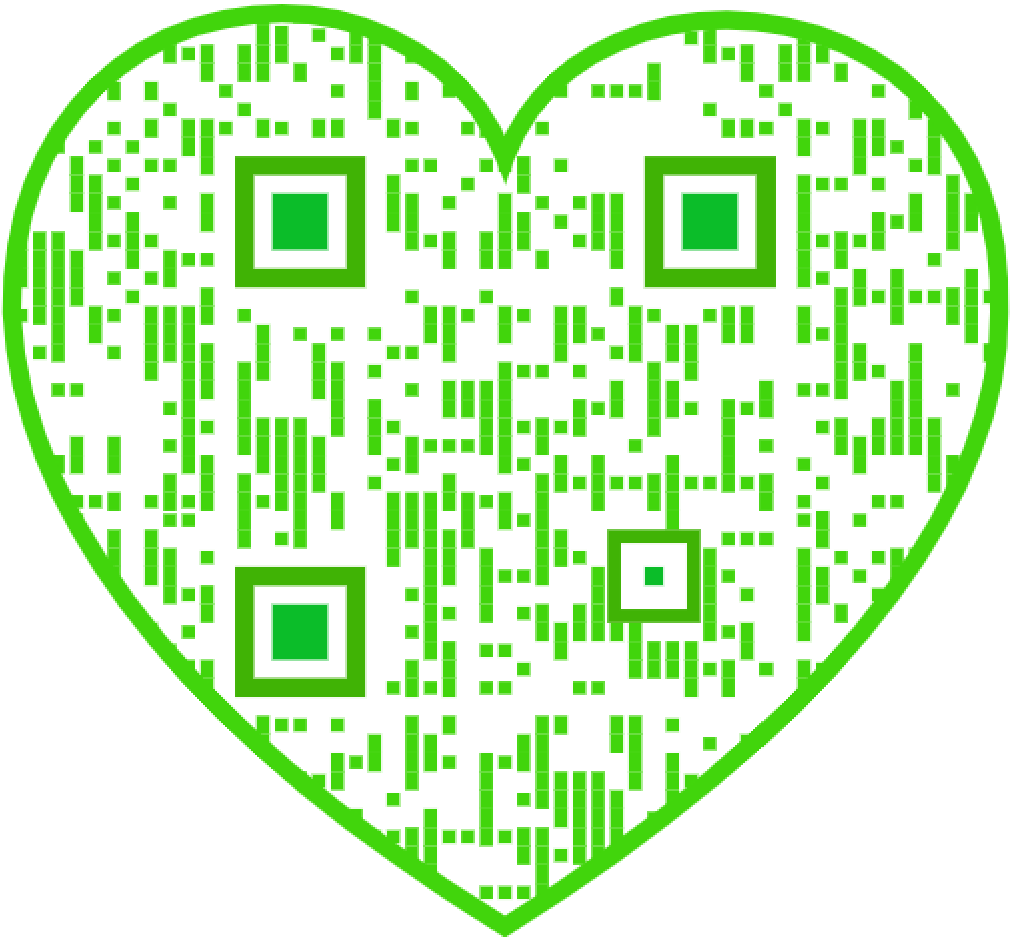
Artists
& ILLUSTRATORS
HOW-TO GUIDES
VOLUME
3

WATERCOLOUR
The natural world

TIPS, TECHNIQUES AND TUTORIALS FOR ARTISTS OF ALL LEVELS

RRP £5.99



Welcome to your third *free* How-To guide, this time on painting the natural world in watercolours!

If you are looking for an insightful read to develop your watercolour skills, whilst also being interested in wildlife and the outside world, in your hands is the perfect publication. From acclaimed watercolour artist and author Tim Pond, this book takes the form of a series of studies, arranged by region, habitat and season. Passionate about the natural world and education, Tim has attracted worldwide critical acclaim for his artwork of animals, landscapes and plants.

Find out how different species from all over the world have made certain habitats their home whilst simultaneously learning about the versatility of watercolour. An ardent teacher, Tim explains how different creatures have evolved to survive fierce winters or sweltering rainforest temperatures, amongst many other things. As [most] animals are constantly on the move, he also encourages a basic understanding of an animal's anatomy, which can help anyone capture the form, movement and, ultimately, the spirit of the creature in question in a painting. His detailed watercolours to accompany the text beautifully illustrate this. They serve as a visual encyclopaedia for Tim's meticulous research and insightful, anatomical explanations.

A masterful union of art and evolution, we hope that, along with this month's copy of *Artists & Illustrators*, you'll be engrossed and entertained by this book offering a wealth of information on our ever-changing planet.

Niki Browes Editor

COVER AND ED'S LETTER IMAGES: SHUTTERSTOCK

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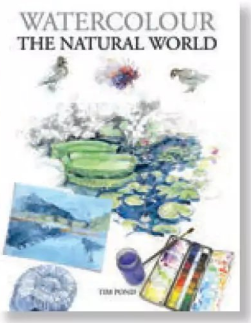
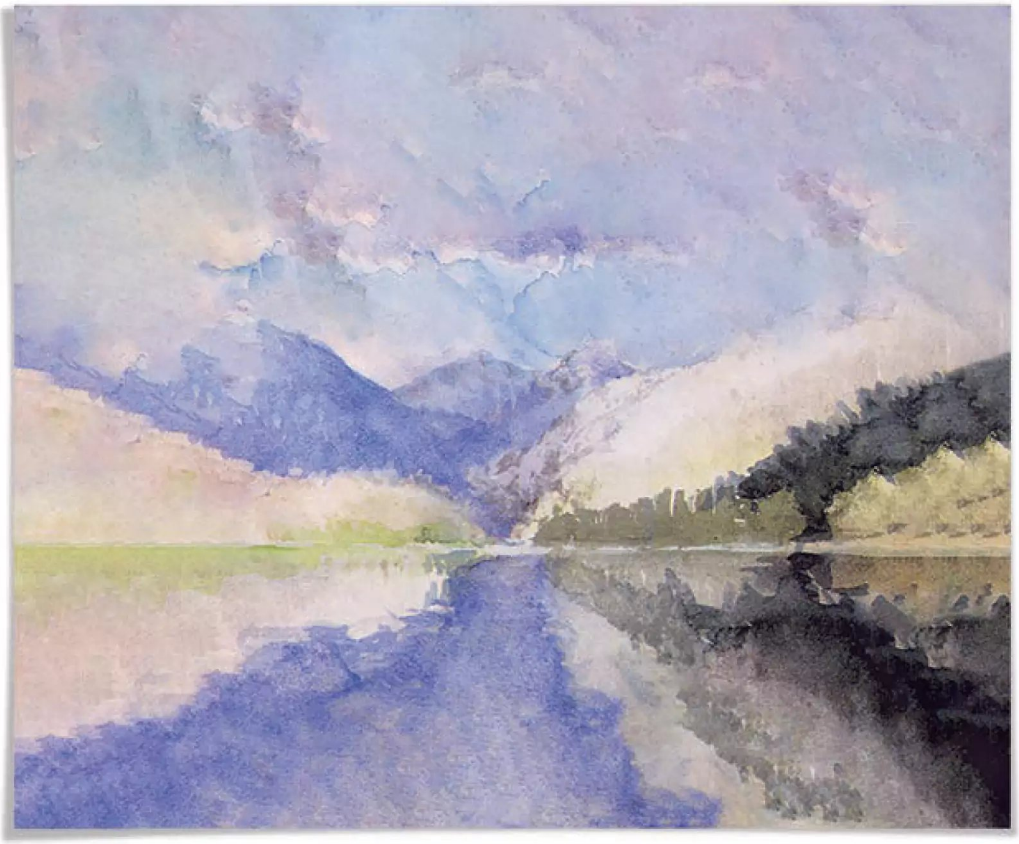


Watercolour The Natural World, GMC Publications, £14.99, available online and from all good bookshops

Introduct

LAKE REFLECTIONS, Prince William Sound, Alaska, USA



Although often viewed as an activity reserved for those with an innate talent, watercolour is a flexible medium that anyone can learn.

I want to take you on a journey from pole to pole to discover a wide range of habitats, from pristine frozen wilderness areas and coniferous forests to dense tropical rainforests. I will introduce you to many of the plant and animal species that have made these locations their home. I will also explain some of the adaptations that nature has evolved to survive bitter fierce winters or sweltering rainforest temperatures.

Over the years, I have been fortunate enough to visit many of these places, either in my capacity as an expedition artist or on holiday. When I have not travelled to a specific habitat, then visits to the local botanical gardens, aquarium and Natural History Museum have sufficed; these places of fascination and wonder are to be celebrated, and I encourage you to explore those that are near to you.

There is pleasure in watercolour painting, which comes from overlaying translucent washes that glow with a unique, vibrant luminosity as light passes through the paint and is reflected on the paper beneath. So get ready to take yourself outside into nature, go on a rambling walk with a sketchbook in hand and explore watercolour in the field.

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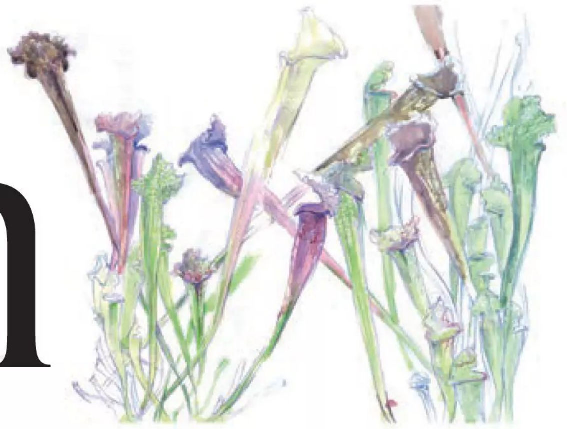
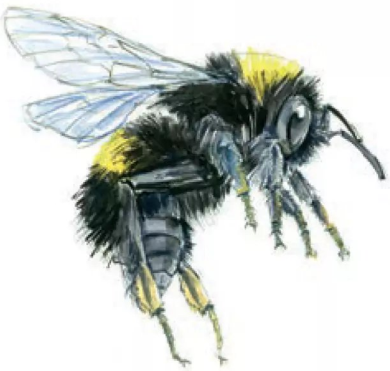


PITCHER PLANTS
Pitcher plants have evolved leaves that have a sinister purpose. It grows to create a well of death that attracts flies with the colour and scent of rotting flesh. The leaf well is so slippery that it is difficult for the fly to grip, and they fall to their doom.

WHY I USE WATERCOLOUR

I began using watercolour in my early 20s when I took part in an expedition in Alaska as an artist. In those conditions, working in oil would have proved impractical, not only because of all the cumbersome equipment I would have had to carry but also because of the lengthy drying time that oils require – any image I created would have quickly become a smeared abstract painting. Watercolour, on the other hand, is an incredibly accessible and portable medium to use. The lightness and simplicity of the materials required – a paint tin, water, paper and a few brushes – meant my art kit could be carried without weighing me down as I travelled through this wild and rugged land. Importantly, too, watercolour paint dries quickly, and its qualities lend themselves to capturing the landscape.



Some of the artwork comes from this incredible adventure, when I explored spectacular landscapes and attempted to capture the ever-changing light and moods in sketchbooks stored in waterproof zipped bags to protect them from the torrents of rain and flurries of snow. Looking at these paintings brings back so many memories, including melting snow over a camp stove to give me water to paint with, as I hurried to capture a glimpse of a blue-white mountain peak while the mist momentarily cleared; and the sound of howling wolves as we kayaked, swept along by the tide, through the myriad gullies of the Prince William Sound, our paddles effortlessly touching the water.

Observing nature and capturing it in watercolour helps everyone to think, feel and understand. The final painting can capture a moment in time and create an indelible memory as you transfer the scene in front of you to the page; perhaps how the sun felt on your cheek or how spots of rain stained your pages when a shower passed overhead. Watercolour painting solidifies the moment, making it more memorable than any photo. To paint in harmony with nature is a guiding principles, aiming to engender in the reader a connection with nature and to enhance their powers of observation and curiosity.

I intend to put all plants and animals on an equal footing, as subjects worthy of equal attention in the life room. One of the lessons Charles Darwin taught us some 200 years ago is that we all depend on each other. All the world's plants and animals play a crucial role in creating the healthy earth on which we also depend. If we want to preserve a species of animal, we need to maintain the whole community of plants and animals that support it. Never has it been more critical for us to develop a compassionate regard for nature. Animals and plants, who have pioneered and adapted to these places, play a vital role in maintaining our habitat's health and even the air we breathe. Watercolour painting is a fantastic way of spending time among nature and developing a healthy respect for its remarkable variety.

Watercolour has an incredible immediacy that focuses the artist's attention while building up transparent washes. This medium can be used in a great variety of ways to create images that can range from lively impressions of landscapes to detailed botanical studies.

Composition

The composition of a painting refers to its key elements and how they are arranged in relation to one another. The focus is on the main shapes, not the detail. An initial sketch will help with planning a composition. For instance, you can play with how much sky or sea you might like to include; whether you wish to place a tree centrally or off to one side; and discover if you can fit all the elements in. Artistic licence allows you to move elements in the frame of the picture to balance the composition. There is no obligation to recreate a photographic rendering of the world – you can put in, take out and move as you so desire.

LANDSCAPE OR PORTRAIT?

Over the years, I have storyboarded for both films and adverts. They have always been landscape format, as they represent the television screen. However, artists have the flexibility to also work on portrait, square and even panoramic images. When storyboarding, different types of shots can help convey a range of emotions, moods and atmosphere, in just the same way that a watercolour painting can be composed. A long or wide shot can tell us about the setting and give a sense of place. A close-up can reveal more about the emotion a character is feeling. The composition can inspire awe, drama, tension and dynamic action. Whether you choose to focus on a wave crashing on a rocky cliff or include the entirety of the seascape can create what I call 'the agony of choice.' Before embarking on a large-scale composition, I recommend creating quick sketches to avoid the pitfalls that might arise at the end of a long painting.

FOCAL POINT

Many beautiful paintings have been created without the artist planning the composition and instead working intuitively. Nevertheless, it is worth mentioning focal points or an area of focus. Picture in your mind a stage of dancers all dressed in white with the lights on full. Your eye darts from one dancer to the next, not fully knowing where to focus your gaze. Now imagine the principal dancer appears in dark blue, and the lights dim to a spotlight. Of course, a painting can have more than one focal point: imagine a dancer in red now takes to the stage, and your eye is happy to view both.

HOW TO SELECT YOUR FOCAL POINT

Before you start to paint, ask yourself what attracted you to the scene. What is the element that drew you to capture that location or subject? It could be anything – a triangular mountain, an autumnal yellow tree, a view of olive groves in the Cypriot mountains. If there is no individual element that you can think of, then perhaps it is the whole view you like. Then it is the case that it might be worth picking something out. Off-centring this visual element can prevent the composition from becoming too static.

SCALE

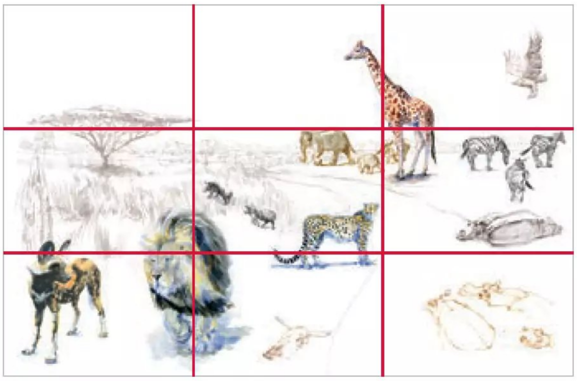
Visual hierarchy is when some elements tend to 'stand out,' or attract attention more strongly than other elements, communicating to a viewer's eyes what to focus on and in what order. I tend to think of it as an orchestra with a lead musician and supporting players. If everything were the same size, each element would fight the eye for equal attention.

UNUSUAL ANGLES AND CROPPING CLOSE

Refresh landscape compositions by exploring new angles such as high or low viewpoints by looking up at tree branches, for instance, or sitting on a stool looking into a hedgerow. One exciting way to create compelling compositions is to zoom in on a fragment. Even the most familiar view can become a dynamic composition or an intimate portrait by zooming in close. After a field sketching trip, sometimes I spread the entirety of my studies across a large table, then select one or two that have potential for a composition. Interesting areas can be isolated by using two cut pieces of mount board.

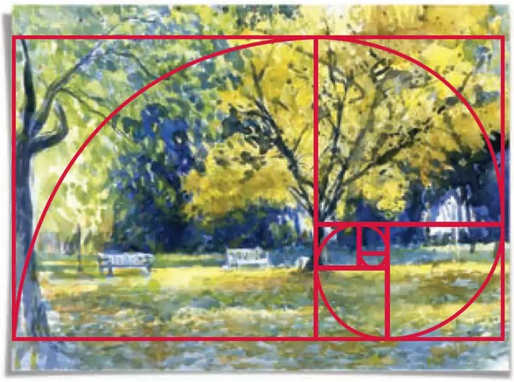
TRIED-AND-TESTED COMPOSITIONAL GUIDES

Here are some methods for creating harmonious compositions. Take time to explore these.



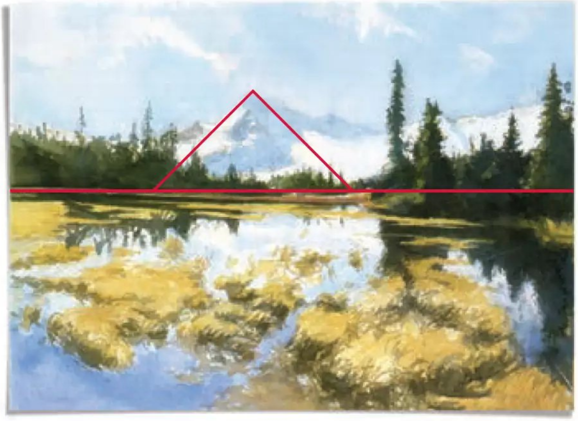
THE RULE OF THIRDS

Break a composition into thirds – vertically and horizontally – then place the key elements of the image along these lines or at the junctions of them. The arrangement achieved will be interesting, pleasing and dynamic.



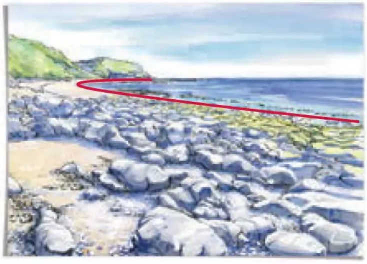
THE GOLDEN RATIO

The art world has felt the influence of the Golden Ratio for centuries – the smaller proportion has the same relationship to the larger one, as the larger one does to the next portion, approximately 1 : 1.618. There is a kind of peacefulness and beauty in these proportions that relates to nature's design and growth patterns.



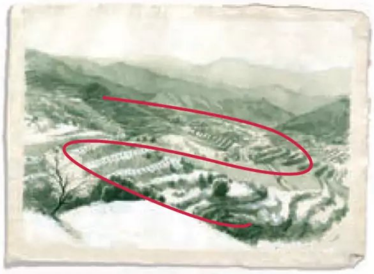
TRIANGULAR

In the classical tradition, triangular or pyramidal compositions were popular because they created balance and harmony by arranging the elements into a stable overall geometric structure. Looking at the picture above, I can still remember my excitement as we hiked out of the forest and were greeted by this fantastic scene. In painting it, I placed the mountain slightly off centre to create a sense of informality. The muskeg, which are patches of boggy grass in the foreground, help to develop an understanding of depth as they get smaller towards the horizon.



C-SHAPED PATH

A path or any delineation in the landscape can lead the eye through the painting to the intended focal point – here, that is the far headland.



S-SHAPED PATH

S-shaped rhythms lead the eye gently through the landscape. It is a very effective technique, with the artist leading the viewer on a gentle meandering journey through their painting.

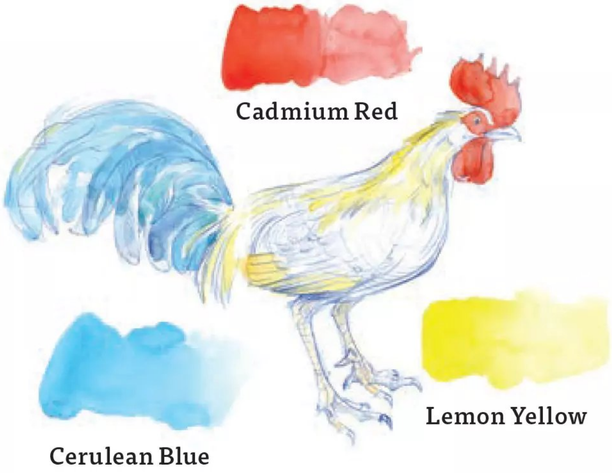
Getting started

There are several traditional and experimental watercolour techniques that you can explore. This is an introduction to the techniques that I most commonly use.

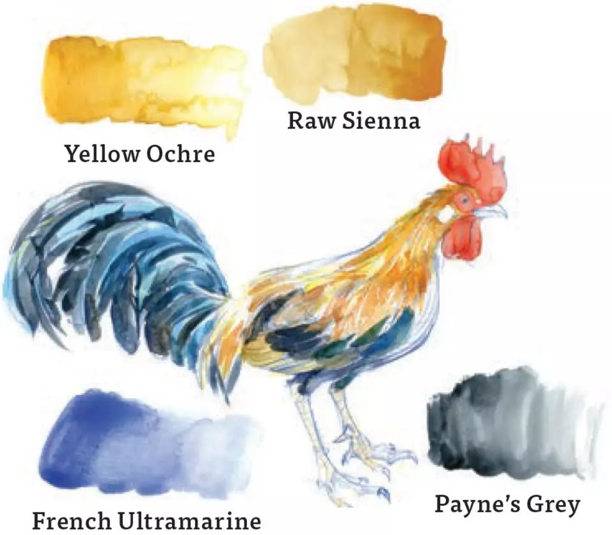
LAYERING

Because watercolour is a transparent medium, you'll need to build up tones gradually as your image emerges, a bit like a photograph in a developing tray. Once a colour has been laid down and allowed to dry, another layer of a different colour can be laid down on top. You'll notice that where they overlap, the pigment mixes and you're left with a different shade. You might also need to compensate for your next move, depending on which colour you are laying down on top of and how mixing the two will affect the final shade. For example, if you lay an initial wash of yellow, then overlay it with a blue, the yellow will tinge the blue to create a greenish shade. A red overlain with yellow will create an orange shade, and so forth.

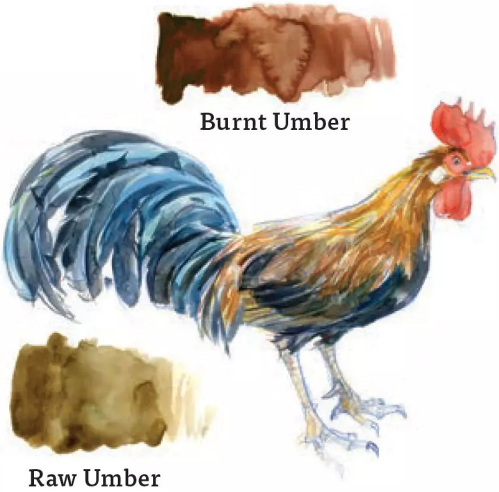
When laying down watercolour, work from the lightest colours to the brightest. Here, I will demonstrate that principle with a painting of a rooster.



1 Start by asking yourself, which are the lightest and brightest colours? Spend time carefully mixing the closest shades. Lay these colours down with plenty of clean water from a large brush such as a No 6. Leave gaps where you require white.



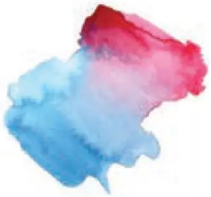
2 Once the first layer is dry, add mid-tone values using a medium-size brush – I tend to use between No 4 and No 6. Vary your brush marks in relation to the size and quality of the different feathers to add visual interest.



3 Apply the darkest colours at the final stage. Use smaller brushes to add detail.

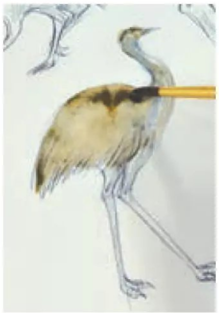
WET-INTO-WET

To practise this technique, using pure water and a single pigment, create a broad stroke with a thick brush. While it is still wet, add colour to the tail end of the water. Watch how the colour blooms in the water, bleeding into the pure water, creating stimulating effects and a smooth, natural colour gradient. Now explore this technique with two colours at either end.



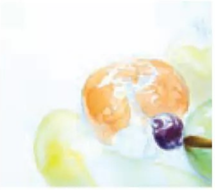
THE BLOBBING TECHNIQUE

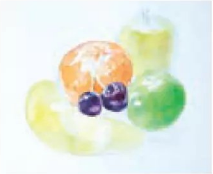
'Blobbing' means applying more saturated pigment to a wet area by simply tapping it in with the tip of the brush, pumping pigment into a wet pool of lighter colour to create a gradient.



LIFTING OUT

The term 'lifting out' means to remove or erase watercolour from the surface of a painting. Often the need arises to lift watercolour paint from the image to lighten it. I only do this when the paint is wet, although some people use an eraser to scrub off dry pigment, which can damage the surface of the paper. Primarily, I use a dry mop brush that acts like a sponge, sucking up the pigment into its bristles to create soft highlights. I do this in many situations, from forming the highlight on a cherry, as shown here, to creating clouds. Instead of a dry brush, you could also use a natural sponge or a paper towel.



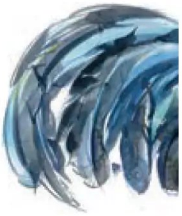


UNDERPAINTING

An underpainting is a monochrome wash that underpins a painting. It is more typically seen in oil painting. Creating an initial French Ultramarine tonal underpainting will help to unify the scene or subject.

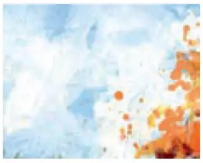
DRAW WITH THE BRUSH

Let your brush marks show in your final work. Accept happy accidents rather than trying to control the media too much and tie it down. Life is in the brush stroke and has more personality than handwriting. The artists' objective is not to create a photographic copy of what you are looking at but an interpretation. Always remain focused on your subject and draw with the brush rather than fill in a sketched shape.



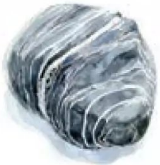
SCUMBLE STROKES

Scumbling is a technique used to create soft hues of layered pigment. Scumbling can be likened to scribbling, and artists have differing views on the scumbling process. For me, it is when I drag in a relatively haphazard way a dry amount of pigment over a dry base, allowing the speckles of the base layer to show through on the paper's tooth to create a texture effect, such as a stormy sky.



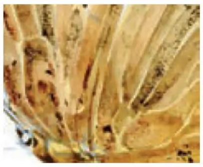
WAX RESIST

You can use a sharpened slither of a candle to make resist wax lines. Here, wax resist has been used to emulate texture on a pebble. Always create your underpainting first. After adding the wax resist, apply the mid-tone values and watercolour over the resist. This will create interesting textural marks as the watercolour forms bobbles on the waxy surface.



GRANULATION

Granulation breaks the pigmented watery solution back into its particles. The older pigments generally granulate well, such as the earth colours of the ochres and umbers, cobalt, ultramarine and black. Granulation happens naturally; however, to encourage the granulation process to a dramatic effect, Winsor & Newton have developed a granulation medium. I place a drop in the palette and pump in the pigment with a brush. Bashing the solution around seems to help the creation of the flecks and specks, which can capture the texture of a dead leaf butterfly wing.

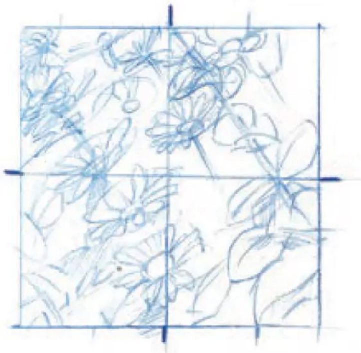


Working from a photograph

It may not always be practical or feasible to work from life, and it is a shame to exclude all those plants and creatures we may not have an opportunity to be able to see, so it's a good idea to learn how to work from a photograph.

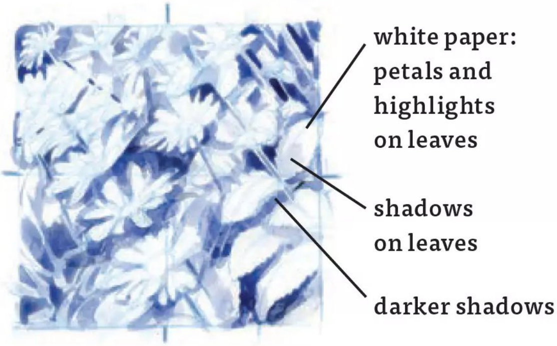
The use of a grid enables you to replicate an image accurately. Artists since the Renaissance have used this transfer technique to copy a preliminary drawing onto a new surface to start working it up into a finished painting, often to upscale to a much larger image. I also do something similar when I am working from a photo, where there is a lot of visual information and it is challenging to keep track of where I am. Cutting a square aperture through a piece of paper allows me to concentrate on a particular area of the painting without distracting the surrounding visual noise. To demonstrate this technique, I have chosen a photograph of daisies that is full of light.

1 Start by selecting a photograph and print it out at 8¼ x 11¾in (A4) or 11¾ x 16½in (A3). Using a set square and scalpel, cut a square aperture that is 4¾ x 4¾in (12 x 12cm) through a piece of cartridge paper to create a square frame. Move the aperture over an image until you find an arrangement that is pleasing and manageable in detail. On a separate thick piece of cartridge paper lightly draw a square box the same size.

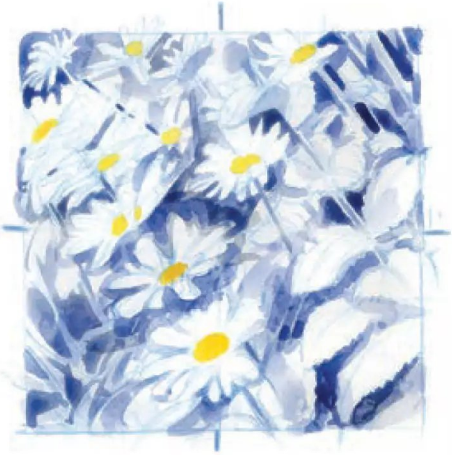


2 Next is 'squaring up.' Squaring up, also known as 'scaling up,' means using a grid so you can transfer with some accuracy to scale. Lightly draw a cross on both your paper and photograph, then copy the contents of each square of the original into the corresponding square of the reproduction.

3 Now make a blue-grey tonal underpainting in watercolour. In this image, it helps to unify the flowers and create a single scene. Rather than starting with the lightest colours, the underpainting technique begins with painting in the negative shapes of shadows by working up to three or four tones (see right). Think of it as a watercolour in reverse. Identify light and dark areas and sketch them in, drawing with the brush a mix of French Ultramarine and Payne's Grey. Squint at your photo to reduce the detail and identify the areas of light and dark. Create contrast – light against dark and dark silhouetted against the light.


white paper: petals and highlights on leaves
shadows on leaves
darker shadows

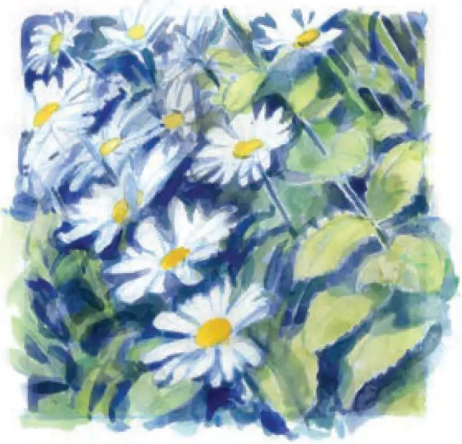
Add in your darkest values while still drawing with the brush. Make sure that these are not too dark so that the paint retains translucent qualities, which also helps with spatial qualities.



4 Add your lightest and brightest colours. In this study I have used Cadmium Yellow Deep with Lemon Yellow to capture the disc florets. Notice that objects at the bottom of the composition tend to be closer to the viewer.

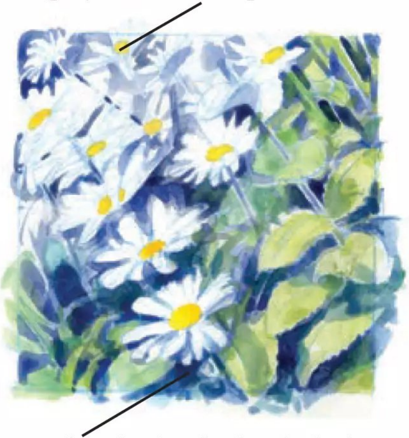
TIP

Make sure to mix your colours accurately. I test my colour mixtures on the photo to see if they match and tend to spend longer mixing the colour than painting it on the page. It is important to remember that you are creating an interpretation of the photograph, not an exact replication, so be flexible and creative in your colour choice.



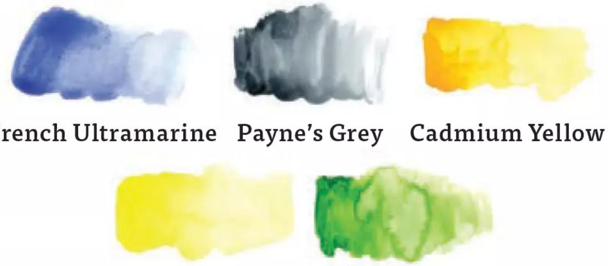
6 When finishing off, you can push the contrast. Create accents and accentuate the lights and darks so that your image pops from the page.

Colour in the light is lighter and tends to be more highly saturated in purer colour.



Colour in the shadow is darker and tends to be more degraded in pigmentation.

5 Next, paint over the tonal underpainting with a light yellow-green wash for the colour of the leaves in sunlight. Achieving the impression of light coming from the page is about tonal values and the relationship between the colour in the shadow and the colour in the sun. Colour in the light is both lighter and tends to be more highly saturated in purer colour, except in situations such as light reflecting off water or glass. The colour of the shadow is darker in tone and tends to be more degraded in pigmentation. Use a combination of the complementary colour and French Ultramarine Blue. Ultramarine was very popular among the Impressionists who used it in abundance in their shadow colours to bring a feeling of air and space to their paintings.



French Ultramarine **Payne's Grey** **Cadmium Yellow**

Lemon Yellow **Sap Green**

ACTIVITY

Go out for a walk with a camera and take photographs of nature's details that might otherwise go unnoticed. Look for unusual compositions and angles. Try to capture details such as the light caught on a petal or the glowing sap green of a backlit leaf. Notice when looking up at a tree how the leaves overlap to create darker tones, just like in watercolour.

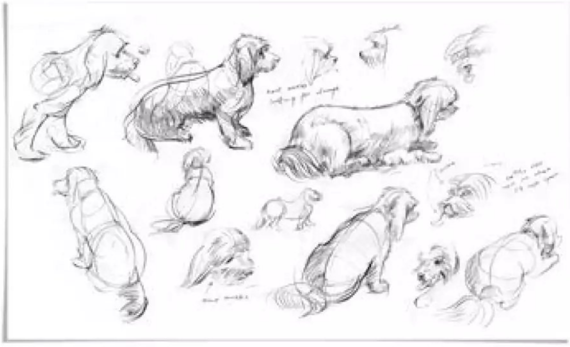
Working from life

The most significant difference between working from a photograph and working from life is that when a subject is physically there, you inevitably form a relationship with it. You pick up on subtleties, such as its character, emotions and energy, and these create a range of responsive feelings that help inform the marks that go down on the page. Working from life, you get to know your subject intimately, leading to moments of humour when your subject is being playful.

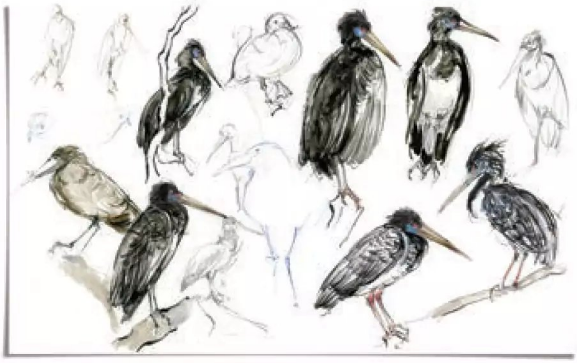
Study sheets

One of the best ways to establish a relationship with your subject is to make study sheets of it. (There is also no better way to develop your observational skills and hand-to-eye coordination.) A study sheet combines quick gestural studies (see right and pages 32 to 33) and more sustained work. It can be an inquiry into anything, a rock, plant or animal, and can include whatever you want it to, from detailed studies of parts of the anatomy to written notes or daubs of colour.

Study sheets help us discover; they are not about creating a polished result. So, don't be worried about the appearance of the page (although your drawings will improve as you become more acquainted with your subject). What is important is that your hand has been activated with your eye giving instruction. Try to feel like you are almost touching the subject and ensure your focus is fully engaged.



Early studies
Pets are an accessible way to begin learning to create study sheets.



Close-up studies
Experience sketching inside an aviary where you can get close to your subject without the frustrations of mesh or glass.

TIP
Don't just use your eyesight to inform you, use your sense of smell and sound to capture the character of your subject.

Study sheets of animals

When working from an animal enclosure I try to keep drawing without stopping. I move rapidly from one sketch to another. Every time the animal moves I start again, and then go back to a sketch as the animal returns to a similar position. I end up leaving lots of unfinished studies scattered on the page.

Animals that aren't sleeping tend to be in continual motion, and quick sketches have a lively, attractive quality that will bring a drawing to life. Wild animals certainly aren't going to sit for a portrait. Rear views, hanging-upside-down views and stretching-out-in-the-sun views are all part of the action.

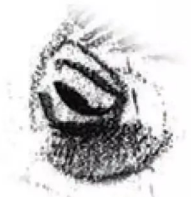
When the subject of your artwork is an animal, it is vital to approach it with a calm and quiet mindset so as not to cause it stress. Take a deep breath and for a few more, simply observe the animal and contemplate what you are about to do.

An observational drawing appears convincing when it's most truthful, when the artist is trying their very best to record what they see. A single line can capture every nuance of the animal's shape and can convey a remarkable amount of information. Create continuous flowing lines that capture the physical boundary of the animal and inner contours resembling what you witness.

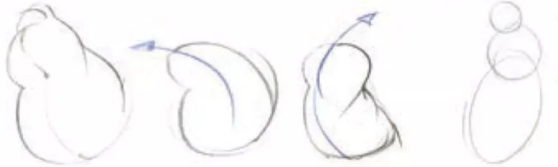
Carefully observe; don't make assumptions. Look at the animal more than the page. If you can, start with a side pose to familiarise yourself with the body parts from nose to tail. Then become more ambitious, capturing more unusual postures, even if the animal has its back facing you. As frustrating as it is, your model could constantly be moving, but this will give your drawing energy. Work quickly. Even though your animal might be standing still, he/she will soon move! Fast, vigorous lines imply power and make your animals come alive on the paper. Return to the unfinished sketch when your subject returns to a similar pose. Work on more than one drawing at once. Don't dictate. You are combining a series of abstract shapes together as something that can be read as an animal.

Example study sheet: Penguins

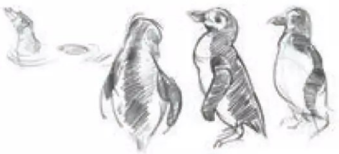
The first question is, where to begin? Each pose might suggest a new starting point. In poses where the head is visible, I often begin my sketch by starting with a mark for the eye. I try to sketch an abstract shape that is characteristic of the eye shape. Look hard before striking the mark. Once the shape is secured, I shade it with vigorous sideways marks. Starting with the eye helps me get the head and body in proportion to it by working beak to tail, shape to shape, building out from the proportions of the head. Other times, I begin by just throwing out a line, the curve of the back, for example, or a series of light loops.



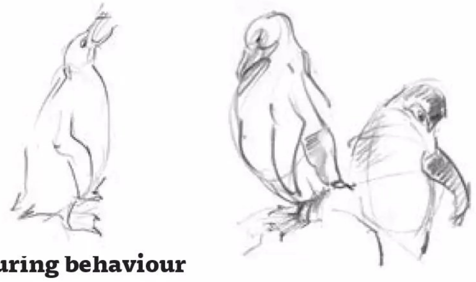
Eyes
Try not to have a preconceived idea of what eyes look like; represent them with marks corresponding to the shape you are observing.



Dynamism and tension
Imagine the body as a dynamic stress ball or a rubber egg. Experiment with creating dynamism and tension with this blob form, just like a stuffed pillow bent into different positions. The line of symmetry creates the line of action of the body.

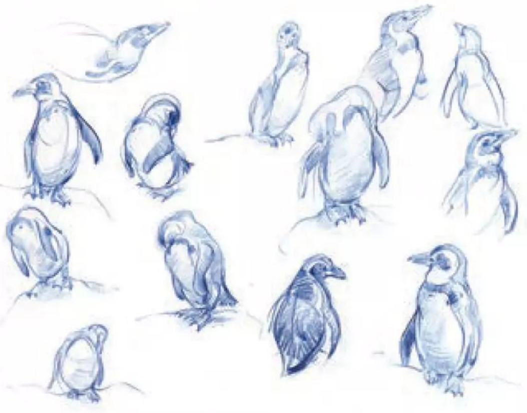


Beak
In repose, the beak of the penguin is often angled pointing up.



Capturing behaviour
Besides the struggles of accuracy while sketching animals from life, there are other equally important elements. One of these is capturing characteristic behaviour, from vocalisations to preening.

Charlie, Humboldt Penguin
Zoological Society of London, London Zoo, UK.



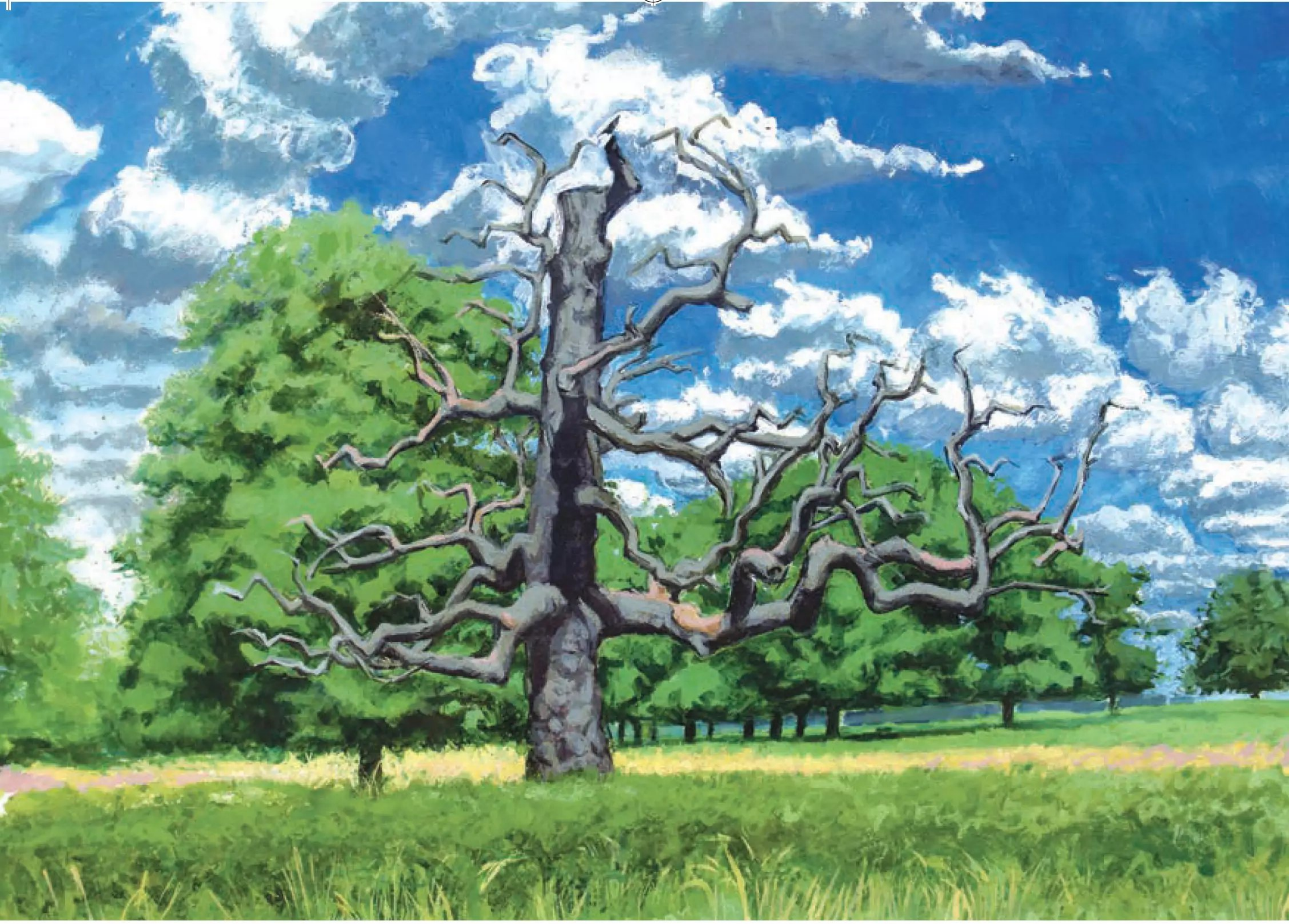
Temperate regions

Temperate climate refers to the zones of the Earth's surface lying between the tropic of Cancer and the Arctic Circle in the Northern Hemisphere and between the tropic of Capricorn and the Antarctic Circle in the south. These mild climate zones do not have the temperature extremes of the poles or tropical regions, but they do have a greater variety of temperatures.

They are home to a wide variety of terrestrial and aquatic plants and animals. Temperate forests include both coniferous and deciduous trees, and both create a habitat for nocturnal animals such as owls, badgers, bats and raccoons. During the day, woodlands around the world are filled with the sound of the drumming of woodpeckers, while lower down, herbivores such as deer and moose graze on the undergrowth. In the warm earth, subterranean carnivorous moles burrow for worms.

Some of the areas in this zone are closer to the sea or ocean, so they have a maritime temperate climate. Because the sea is nearby, rain may fall at any time of the year, but temperatures do not vary as widely because winds coming off the sea regulate land temperatures.

The Mediterranean climate gets its name from the environment found around the Mediterranean Sea, which is close to the equator and hence warmer. Several other places worldwide, such as California, central coastal Chile and southern Australia, also experience this climate. It is characterised by dry summers and mild, wet winters. The grass is not as lush, and scrublands are typical, created by small shrubs, grasses and herbs. Cork, conifers and cacti are well adapted for the dry summers. Prey animals without fussy diets, such as rugged goats, sheep and rabbits, thrive and are always on the lookout for their predators of jackals and lynx. Insects, the food for many lizard species, also enjoy the dry conditions.



Spring

As winter draws to an end, the Earth tilts towards the Sun and the warmer air and more extended periods of sunshine trigger new beginnings for life on the planet.

At the beginning of the day, the dawn air is full of the sound of birds singing a chorus, as if celebrating the start of a new, milder, less inhospitable season after the long hard winter in which many may have died of starvation or the cold. They are calling out for a mate, the first signs of the beginnings of the next generation. Seeds that have lain dormant start to sprout roots as this seasonal rebirth begins, and buds soon start to grow from beneath the leaf litter, providing nutritious food for herbivorous animals in the seasons.

In the southern regions of Alaska, the snow begins to melt, avalanches come tumbling down the side of mountains, fresh green and yellow shoots push their way through the top thawing soil. A little below is the permafrost, where the ground never defrosts. Yet on the surface, small flowers start to bloom. On the other side of the world, spring is one of the most favourite and notable seasons to the people of Japan. Cherry trees burst into blossom, creating a spectacle that attracts visitors from all over t he world, drawn to the tranquil, enchanting atmosphere that these flowers create.

A dead tree by Isabella Plantation

I created this portrait of a dead tree by Isabella Plantation, Richmond Park, London, surrounded by the fresh sap green of new growth. I also perched a black crow on top as a symbol of mortality and death so that the tree becomes a sort of memento mori. I enjoyed painting the gnarled, twisting branches grasping outwards. Although dead, the tree now takes on a new life, that of a bug hotel.

What to look for in the spring landscape

Spring is the season when animals such as hedgehogs, dormice and bumblebees awake from hibernation. Other animals begin pairing for reproduction. Mallard drakes chase female ducks. Willow and hazels sprout catkins, and the first buds of new life emerge all around. From beneath the rotting dead leaves that fell last autumn and provided essential nutrients for the soil, fresh shoots of violets and snowdrops push their expanding flower buds through the leaf litter.

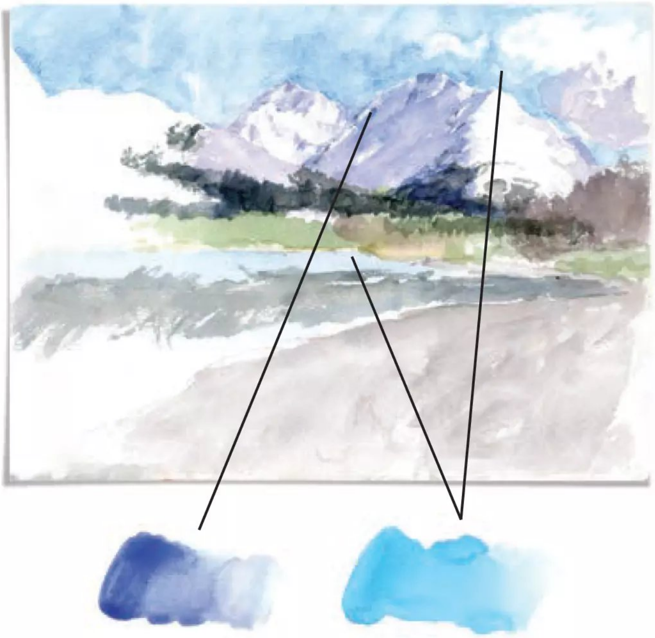
Songbirds seek out twigs to build nests. Large-winged birds such as geese and swans arrive at estuaries in squadrons flying in a V formation. In ponds, frog spawn gathers in its gelatinous clumps. Each black spot is an embryo surrounded by a coat of jelly ready to develop into tadpoles. In rivers, brown trout jump out of the water to catch mayflies dancing their short mating dance on the surface. After their mating flight, mayflies are usually dead by the end of the day. There's only one thing they really care about on that one eventful day, and it's not eating; they don't even have a mouth. In fact, most of the life of a mayfly is spent beneath the water in a larval stage.

The spring palette

There are many colours you will see throughout the seasons. Some of these are more accentuated in spring. Fresh acidic greens and the lemon yellow of the growth of new shoots. The egg-yolk yellow of daffodils and the Cerulean Blue for bright, chilly, clear mornings that have made a welcome return. The light pink of the Japanese cherry blossoms creates feelings of sensitivity, femininity and romance; it is a soft colour that puts people into a state of calm. Bright pinks glimmer in sprouting crocuses too. The emergence of snowdrops is a sure sign that warmer weather is on the way; their petals are pure white droplets. White is a colour without a hue called achromatic. Throughout much of history, white has been used as a symbol of goodness and purity.

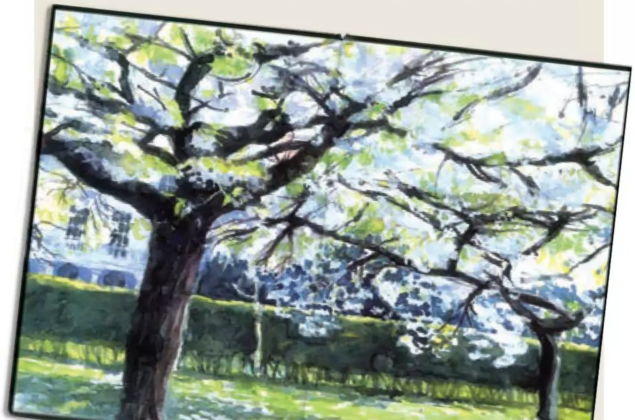
Moose Pass, early spring, Chugach National Forest, Alaska, USA

Spring in Alaska is when the snow begins to retreat up the mountainsides. In this sketch there is no underdrawing. It is created by drawing with a thin brush, starting the shadows in the snow with a pure French Ultramarine and then moving shape to shape, attempting to place the correct hue in the right place. A block of dark conifers below the snow line, a lighter shade of green vegetation beneath, a yellow line of shingle creates the shore, and the Cerulean Blue of the sky is reflected in the ice of the lake that is just beginning to thaw.



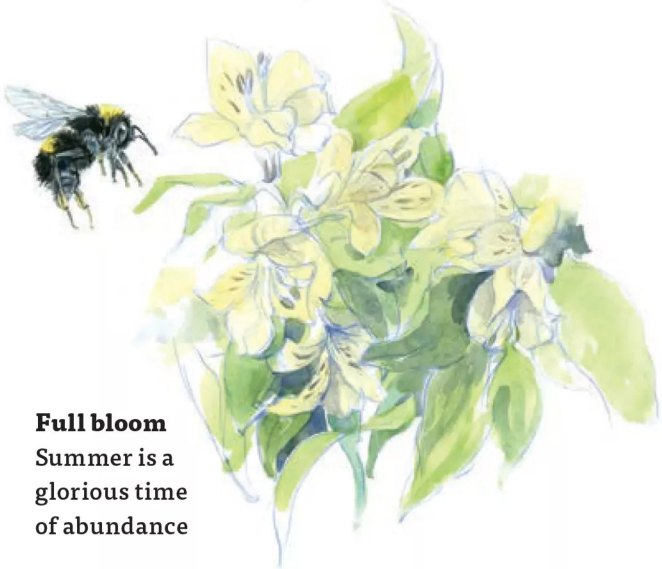
ACTIVITY

Parks are a valuable refuge for plants and animals in urban areas that can become concrete deserts for wildlife. Take a sketchbook out with you to your local park and try to capture the explosion of blossom.



Summer

This is the season of plenty when the days are at their longest. It invokes memories of childhood, the bright blue sea, the sound of seagulls and laughter. Golden rays of sunlight caress the landscape from the breaking of dawn until sunset brings forth a vivid palette of vibrant warm hues as the sun, like the deep, orange yolk of an egg, slowly slips below the horizon.



Full bloom Summer is a glorious time of abundance

All the landscapes in the temperate zone experience this summer light, whether coniferous or deciduous forests, mountains, coastal cliff faces or estuaries. Sketching outdoors, you get a greater sense of the atmosphere and can fully immerse yourself in the light and warm air of the day when everything seems so alive and the hedgerows buzz with life.

What to look out for in the summer landscape

The summer sun ripens fruit in orchards around the world in the temperate zone; it lights up fields of long, wavering grass and rolling meadows peppered with wildflowers and the shrill call of skylarks trebling upwards. These rays of light penetrate through the canopy of forests to create dappled light on the green grass floor. Sunlight sparkles on the backs of silverfish darting in crystal streams and shimmers on the liquid surface.

Flowers provide a host of vibrant subjects for the artist. Besides marvelling at their beauty, summer is also a time for us to wonder at one of the most remarkable examples of symbiotic co-evolution on Earth between plants and pollinators. While most pollinators are insects, there are others, such as hummingbirds, mammal pollinators, such as bats and lemurs, and reptiles such as the gecko lizard.

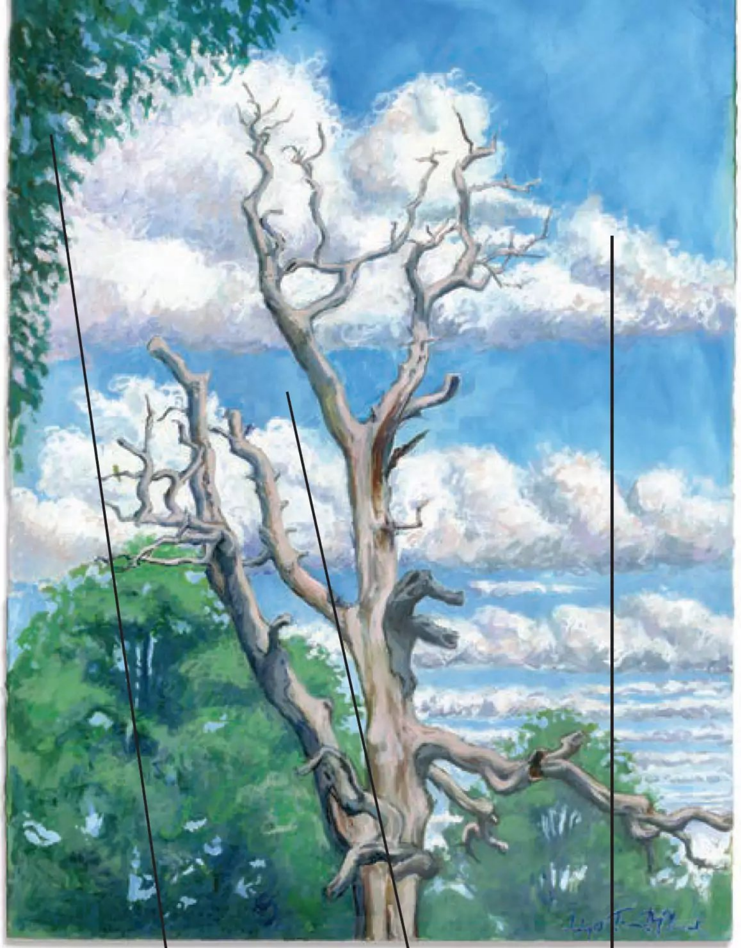
Most flowers use colour to attract insects, sometimes helped by ultraviolet-coloured guiding marks on the petals that are invisible to the human eye. The flowers are often shaped to provide a landing platform for insects or force them to brush against their anthers and stigmas. Colours can't be seen in the dark, so scent is essential for flowers pollinated by night-flying insects such as moths.

The more the sun warms the flowers, the more nectar they produce, which is a valuable source of nutrition for the honeybee. The summer is a busy time for honeybees, for they are already starting to harvest the nectar to create honey to keep them going over the following winter. All worker honeybees are female; to produce 1lb (454g) of honey, two million flowers must be visited. A female honeybee visits 50 to 100 flowers during a collection trip. A single bee will produce only around a twelfth of a teaspoon of honey in their lifetime, despite their earnest industry, so it helps to be part of a cooperative colony. The distinctive sound of the buzzing of honeybees, which we associate with summer, is created by their wings beating 11,400 times per minute.

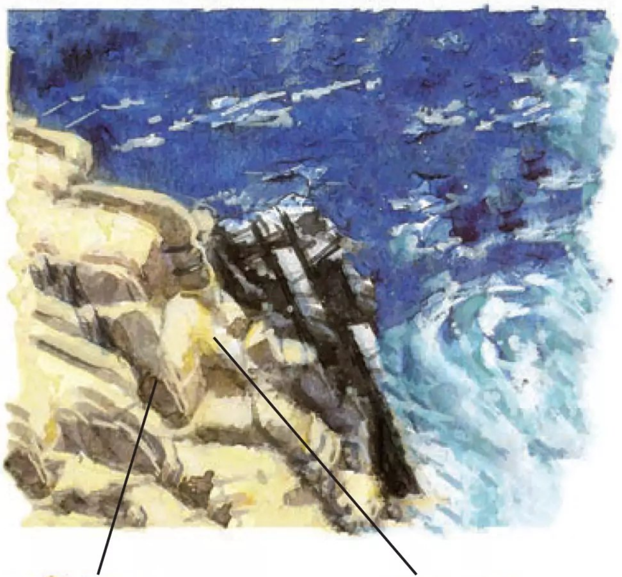
In North America, brown and black bears will, in turn, raid beehives. Bears are not fussy eaters and will eat the lot – grubs, honeycomb, even the bees themselves – putting up with the occasional sting to fatten themselves up for their winter's hibernation. Honey itself can be a vital source of nutrition over the summer period; a bear can double its weight.

Staying cool

These seemingly carefree days can also bring sweltering temperatures and carry their own challenges certainly with the climate seemingly hotting up at an alarming pace. Therfore, it's a time when animals need to keep cool. Some animals such as dogs and birds pant to lose heat. Birds, such as owls, open and drop their wings to do the same, while others fluff out their feathers or take a birdbath to cool down, much like we do when diving into the sea or taking a dip in a pool. Much needed relief, for all.



Extended highlights
Experiment with using White Gouache opaquely in the highlights contrasting with translucent darker colours.



Viridian

Cerulean Blue

White Gouache

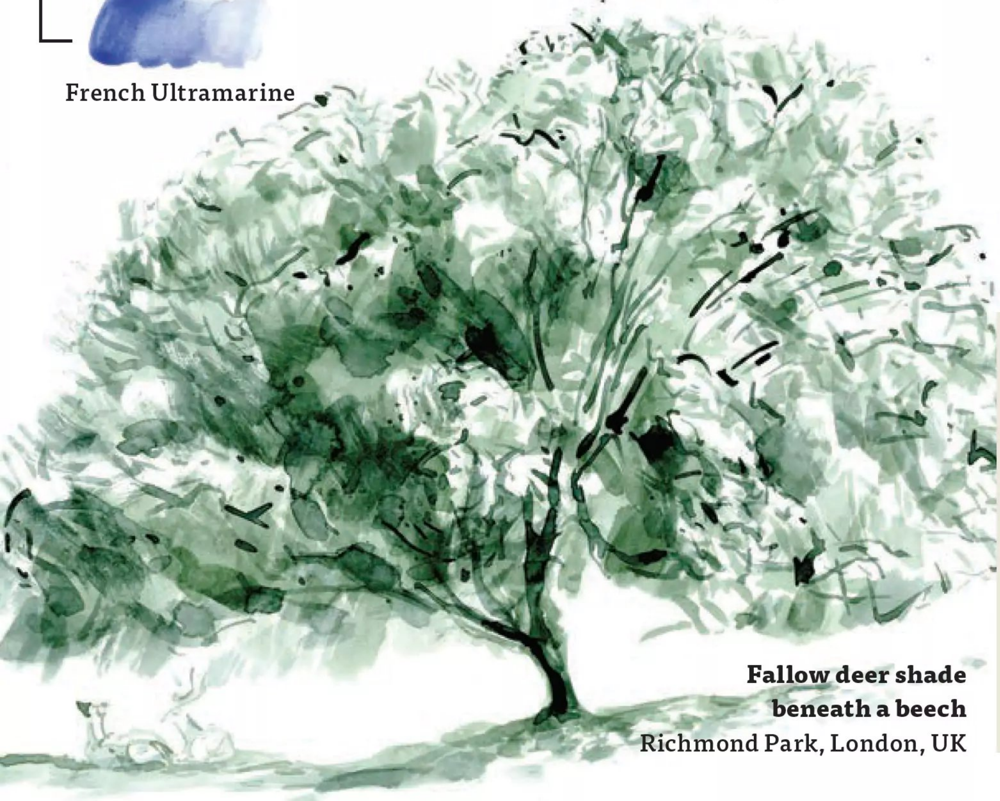
Raw Umber

Lemon Yellow

French Ultramarine

Yellow Ochre

White Gouache



Fallow deer shade beneath a beech
Richmond Park, London, UK

ACTIVITY

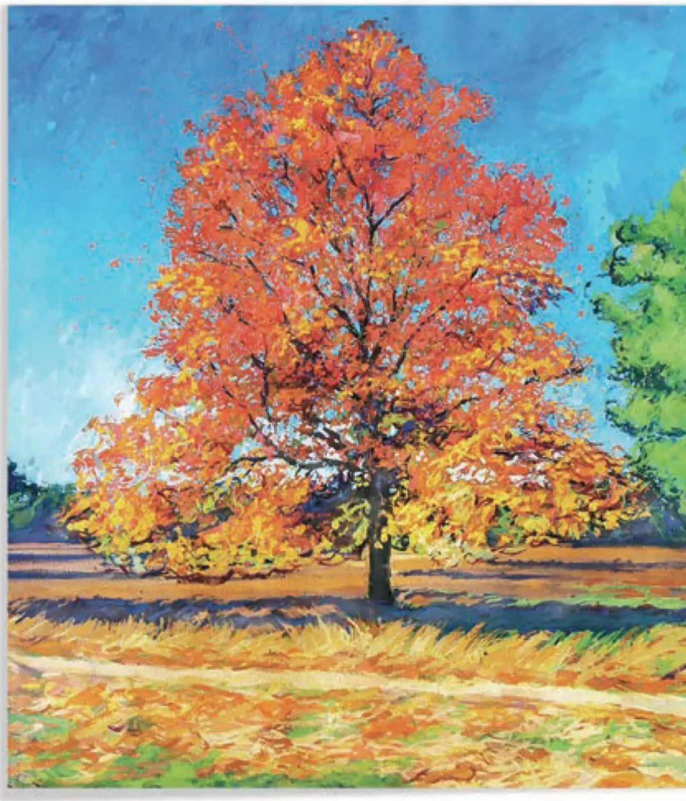
Have a go at mixing five colours that remind you of summer, and experiment with pastel ice-cream shades too. White Gouache can be added to achieve a chalky opaque finish.

Autumn

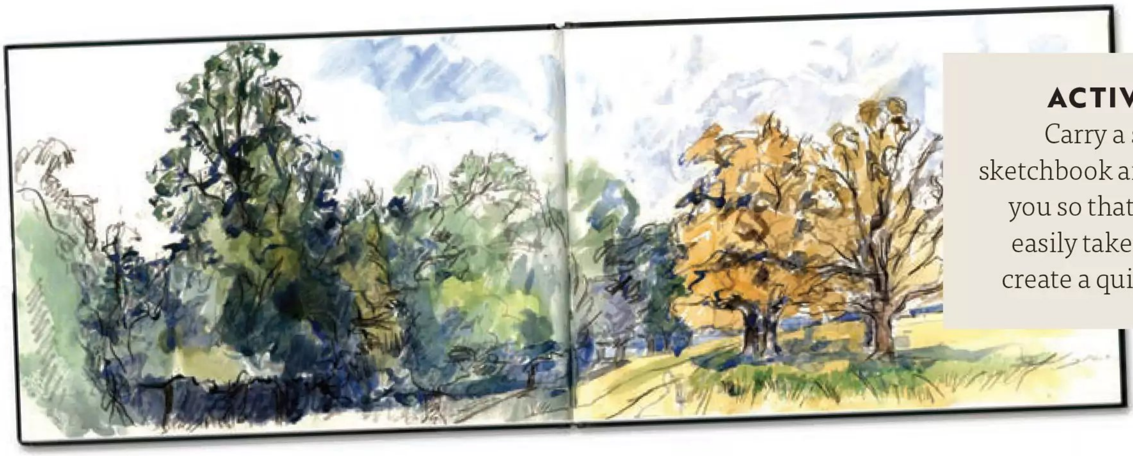
Autumn across the temperate world is one of the most spectacular seasons of them all. It is an inspirational time of year to go out into the field and sketch in watercolour. The English poet John Keats described it as the 'season of mists and mellow fruitfulness.'

The nights lengthen and the days become shorter. Vibrant colours are short-lived as winter hastens. Landscapes take on their annual display of seasonal decay, with misty mornings, frosted lawns and frozen stems of grass. At the heart of this seasonal change is the changing colour of the leaves, which creates one of the greatest shows on Earth in the temperate zone. Trees draw down all their resources from their leaves to their roots, and the colours of the leaves transition from sap green to lemon yellows, rich golds to deep Alizarin reds.

Autumn is a season of change and contrast. It forces you to work quickly – the appearance of a tree can change in a matter of days as the Earth tilts away from the sun and the sun's rays grow shallower. Golden and russet leaves get blown in the autumn breeze . The branches become bare.



Autumnal contrasts
Cerulean Blue is a vital pigment to capture the clear blue skies that can contrast with the lemon yellow of early autumn leaves.



ACTIVITY
Carry a small sketchbook around with you so that you can easily take it out to create a quick study.

What to look for in autumn

While we can enjoy the colourful beauty of this season, animals experience an intense time of harvesting. For them, there is no time to waste; winter is on the horizon, which can bring a thick blanket of snow to hide their food, so autumn is a time of vital preparation. Autumn's harvest supper of fruit and vegetables is a critical supply of food to build up their bodies for the tough times ahead, so all animals tuck in when they can to increase their body fat or fill their larders. In North America, a beaver will stock up on plants and leaves to sustain the dam through winter. In Alaska, grizzly bears wait by the side of overflowing rivers for the arrival of Pacific salmon, as they start their ascent to their breeding grounds from which the males won't return. In the sky, annual migration begins; wildfowl take to the air in V formations in search of richer, warmer pastures.

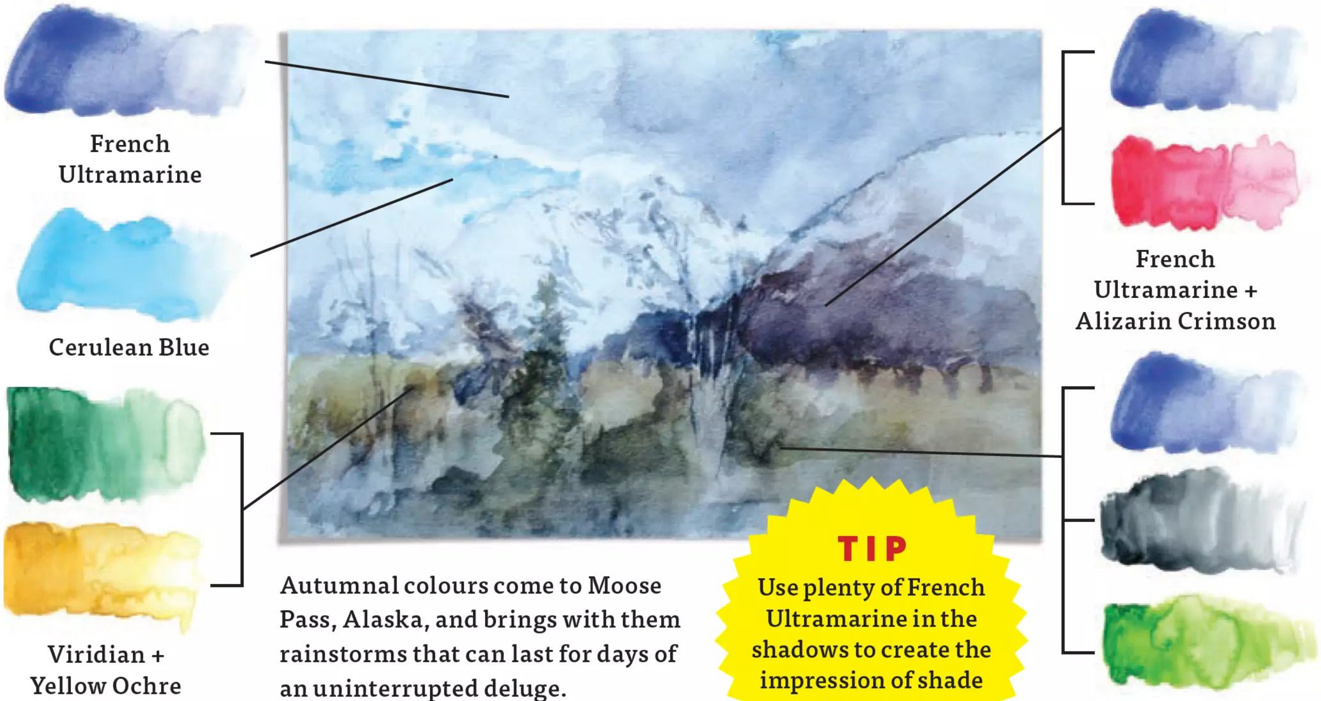
Nuts are the ideal packed lunch to help animals get through bleak winter months when food is scarce. They are packaged in a self-preserving husk and are highly nutritious. Woodland rodents in the form of red and grey squirrels forage and stash their nut larder in secret spots marked by recognisable markers such as an oak tree. They scrape a small hole in soft earth and bury their prize, patting the soil down on top to hide it from birds. Later they will return to their secret spot with a mental map of their location. Squirrels can even sniff out stored nuts under a thick layer of snow. Smaller members of the squirrel family, the Siberian chipmunk, cram as many nuts into their expandable cheeks and store as much as 9–11lb (4–5kg) of nuts in their underground burrows. Before hibernating, they layer the burrow with a warm bedding of dried leaves and grasses and wake every few days to dine from their en-suite larder.

Why do leaves turn brown?

Because the days are shorter and the Sun is further away, trees can no longer sustain their leaves. Leaves are full of a chemical called chlorophyll that is bright green and has a unique function that can capture the energy in sunlight and convert it into sugars that the trees then use as energy. There are, however, other pigments in leaves – yellow, orange and red – that we can't see because there is just so much chlorophyll in them that it masks the other colours in spring and summer. As the trees start to produce less chlorophyll, we begin to see the other pigments. The leaves eventually die and fall from the trees. When they litter the ground at the base of the trees, they act as a natural fertilser, and the trees survive the winter from the energy they have stored up.

The autumn palette

Autumn is a time of outstanding beauty when we are treated to a final burst of colour before the onset of winter. Autumn's sketchbook is full of russets, ochres, Burnt and Raw Umber, Raw Sienna and the all-natural, earthy browns that dominate the late autumn landscape. Autumn's harvest brings dark greens and warm colours, a visual feast of seasonal fruit and vegetables.


French Ultramarine
Cerulean Blue
Viridian + Yellow Ochre
French Ultramarine + Alizarin Crimson
French Ultramarine + Payne's Grey + Sap Green

Autumnal colours come to Moose Pass, Alaska, and brings with them rainstorms that can last for days of an uninterrupted deluge.

TIP

Use plenty of French Ultramarine in the shadows to create the impression of shade and airy space.

Winter

As the Earth turns on its axis, the power of the sun's rays weakens and the days shorten. Winter is a time when temperatures drop and life can go into a period of suspended animation. Snow and frost can create spectacular landscapes of a winter wonderland that are inspiring to paint and sketch.

But this time of the year is particularly challenging for animals, and only the toughest and most ingenious will survive. Dazzling displays of snowy fields, icicles and frozen waterfalls belies the struggles that animals face in staying alive and finding food. As temperatures plummet, one of the first challenges that winter brings is staying warm.

Plants can't migrate; they are rooted to see the winter through. For them, one of the most difficult aspects of winter is that water can be frozen and cannot be taken up through their roots. Deciduous trees shed their leaves to stop them from evaporating precious water into the air. Coniferous trees retain their leaves and needles, which have a thick, waxy coating to reduce water loss. This period of dormancy, where plants are ticking over but not growing, comes with the annual seasonal chill. Seeds and bulbs lay dormant, waiting for the warmth of spring to spark them into life. Plants not adapted for the cold must be brought indoors to prevent frost damage. These, too, need less watering.

What to look for in winter

In the Highlands of Scotland, temperatures can drop to as low as -22°F (-30°C). To cope with these temperatures, ptarmigan, a small grouse, grows more feathers to keep the heat in. It even has feathers on its feet, nostrils and eyelids. By covering as much of its body as possible with these insulating feathers that trap warm air, it can survive the bitter cold. Seasonal adjustments in the appearance of the animal also keep the ptarmigan out of harm's way. The ptarmigan's feathers turn entirely white in winter to blend in and become almost invisible in the snow, hiding it from predators, except for its tail and eye patch that remain black.

Snow itself is frozen cold, although it is also 95 percent air, so it can act a bit like an ice duvet. Some animals around the globe have taken advantage of this. Polar bears hibernate in dens made of snow, and until recently were thought to be the only mammals to do so. That is until a discovery in Japan where scientists witnessed that Ussurian tube-nosed bats leave their tree roosts to drop onto snow accumulating on the ground. Once there, they created an impression of their body and became covered by more snow as it fell. The bat's shuffling wing movements and body heat create a small cavity like an igloo, in which they curl up and wait for spring. This snow hollow is warmer than the tree cavities they usually roost in, which in winter are blasted by icy winds.

Snow is also excellent for soundproofing, as it soaks up sound waves. In Alaska, the winter is called the great white silence. The aptly named snowshoe hare, found in North America, has big furry feet adapted to hopping on the surface of the snow to allow it to run quietly without breaking through. Like the ptarmigan, the snowshoe hare also adjusts its coat to match the habitat. It follows the same seasonal colour variation with the mammal's excellent insulator, fur. Fur and skin are coloured with a pigment called melanin. It is the seasonal absence of this pigment that turns the pelt to a pure wintery white. The word melanin comes from Greek and means 'dark black.' Melanin can produce a range of colours that we see in mammals' skin, hair and eyes, from pale yellow, tawny, buff and ginger to red-brown, brown and black. The light-absorbing properties of melanin act as a barrier against the damaging effects of the ultraviolet rays of sunlight. You will notice gradual tanning of your own skin after being in the sun for an extended period.

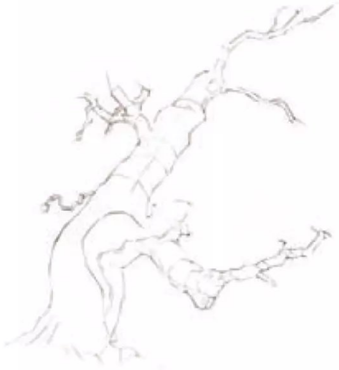
If animals can't escape the freezing conditions, they need to be well insulated. The Arctic fox grows one of the thickest white winter coats in the animal kingdom and even has warm, furry pads on the soles of its feet. An extreme example of this is the Chinese snow or snub-nosed monkey, endemic to the Yunnan Province of China, which has no nose to prevent it from suffering frostbite.

Migration

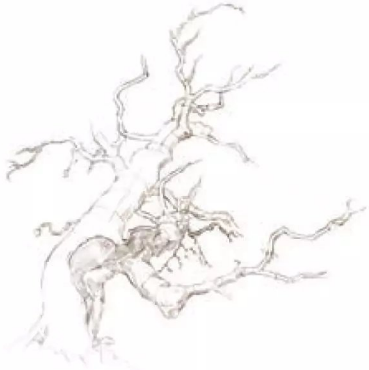
Another strategy for surviving the winter is not to remain in the cold conditions. Some species of birds are renowned for their epic migrations to seek out warmer climes. Other animals on the land and in the sea also adopt this escape strategy. As terrestrial herds of caribou, the American name for reindeer, head south, aquatic narwhals escape the Arctic's bitterly freezing winters by migrating through channels in the sea ice far out to sea where the water will be warmer. These, sometimes arduous, journeys are necessary for the survival of the flock, herd, shoal or swarm.

The winter palette

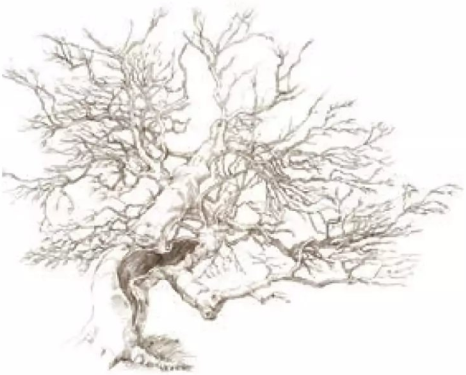
Winter's sketchbook is full of cool colours, from silvery greys to icy blue. The pure, brilliant white of snow and the charcoal black of rocks peeping through. Deciduous trees are now bare umber branches, while conifers remain dark green. Another evergreen makes an appearance as a Christmas decoration – holly's waxy serrated leaves and blood-red berries. Try mixing five colours that capture the atmosphere of a winter's day.



1 Start your sketch of a winter tree with the trunk.

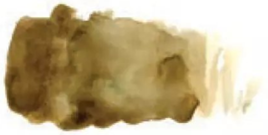


2 Continue to draw by following the way the tree grows – adding the branches and working your way out to the little twigs.



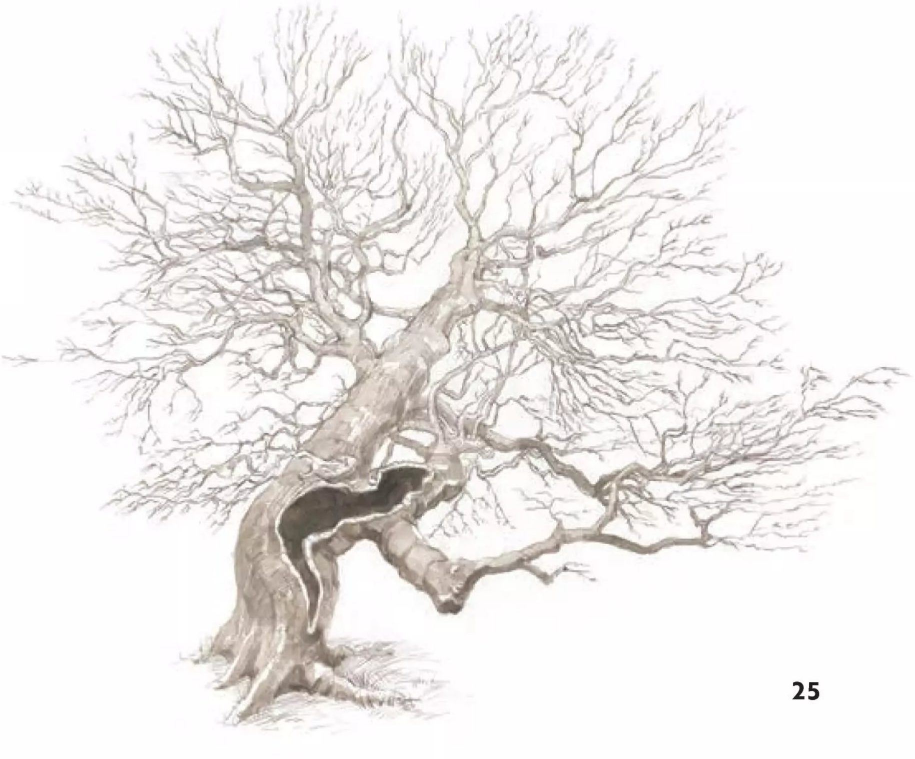
3 It is important to remember that with such a complex subject you are creating an interpretation – you don't need to draw every twig.

4 When the sketch is ready, add varying quantities of Raw Umber and French Ultramarine with a small chisel brush.



Raw Umber

French Ultramarine

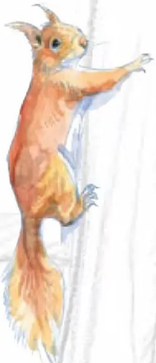


British deciduous woodlands

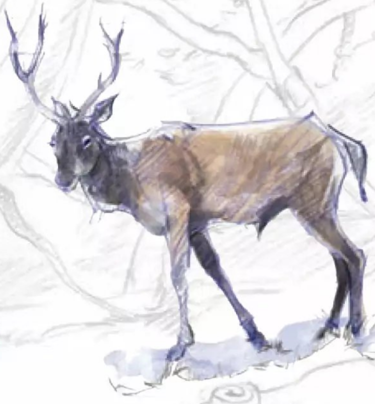
Deciduous woodlands, full of broad-leafed oaks, beech trees and elms, occur in areas with plenty of annual rainfall. These woodlands, some of which are ancient, are places where we can take time to regenerate and immerse ourselves in a green world bursting with scents and sounds. The wolves have long gone, but many British forests still have a sense of the 'wildwood' that stirs the imagination.

As with any forest, the vegetation is layered. Above your head, the branches of tall trees reach to the sunlight creating a canopy layer. To your side is the shrub layer made up of smaller trees including ash, hazel and holly. Beneath your feet is the ground layer, which can be a bracken, grass or a bright-blue bed of bluebells in spring. Deeper down is fertile rich brown earth that is replenished annually with the fall of autumnal leaves that decompose with the help of insects and are mixed into the soil by earthworms.

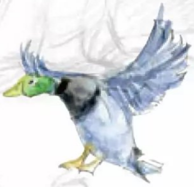
In woodlands, as with every other place on Earth, no one organism lives in isolation – each is dependent on countless relationships. All this life evolved together over millions of years creating stable natural communities. These communities act as a trading cycle of nutrients – something not needed by one species becomes food for the next, creating a waste-free circular cycle. Insects create the foundations of this ecosystem. They recycle dead leaves, turning them into vital nutrients for plants.



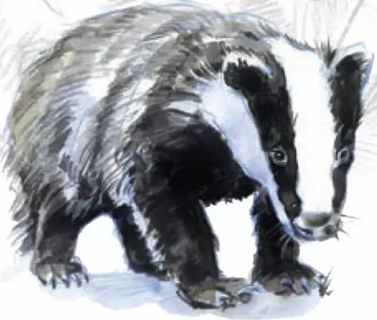
Red deer
In woodland, red deer are largely solitary or occur as mother-and-calf groups. Traditionally, these large herbivores provided sustenance for larger predators such as wolves.

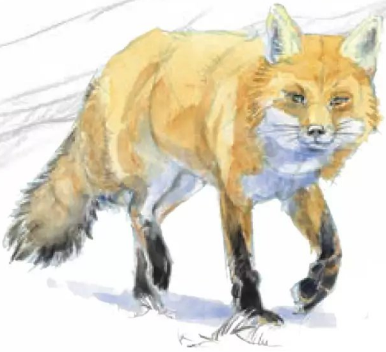


Mallard
Mallards play a key role in keeping wetland plant communities diverse and healthy.



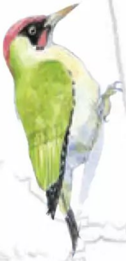
Red squirrel
Grey squirrels were introduced to the UK from North America by the Victorians. The first record of them escaping and establishing a wild population is 1876. From then on, they have taken over the red squirrels' niche, forcing them to the country's margins. They are arboreal mammals that feed on seeds, nuts, berries and fungi



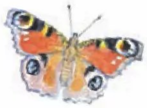


Badger
Badgers are essential apex predators, uniquely adapted to digging, which helps them find and eat burrowing mammals, thereby controlling the number of rodents and protecting the ecosystem from being overrun.

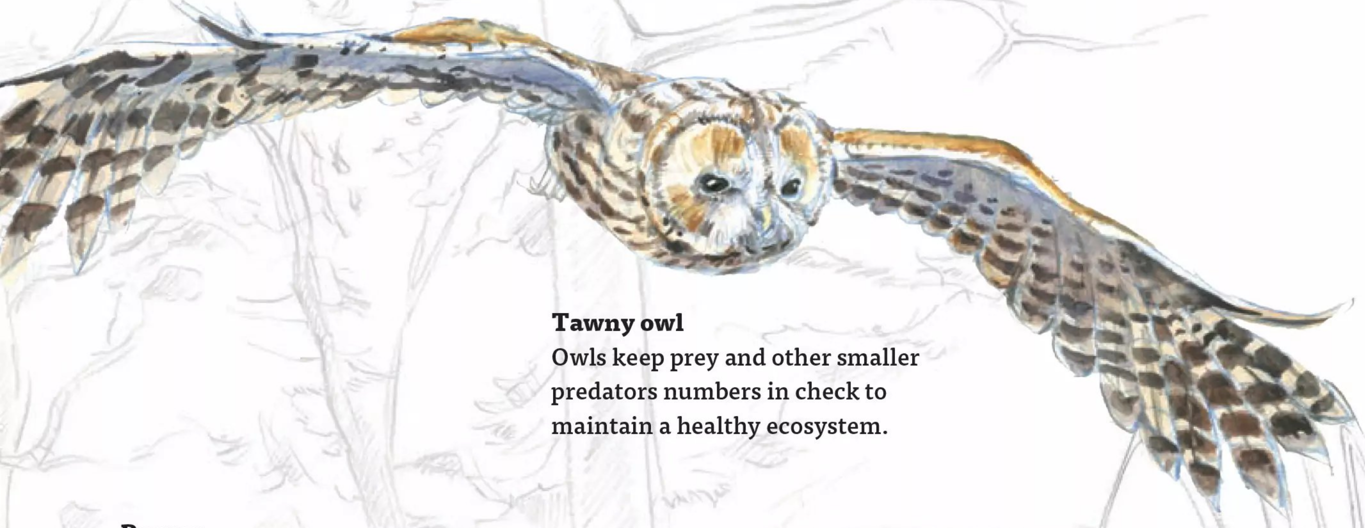
Red fox
Foxes have a unique way of hunting mice. They stand listening and watching intently, then leap and bring their forelimbs down, pinning the mouse to the ground.



Green woodpecker
Green woodpeckers are insectivorous with a particular taste for ants. They use their strong beak to dig into ant colonies and eat the inhabitants flying between trees on an undulating flight path.



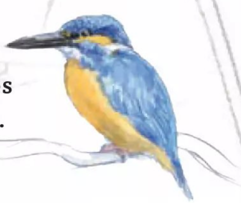
Tortoiseshell butterfly
Butterflies pollinate and are natural pest controllers.

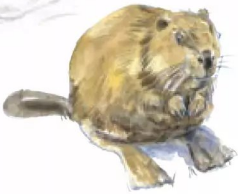


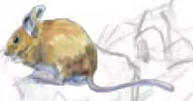
Tawny owl
Owls keep prey and other smaller predators numbers in check to maintain a healthy ecosystem.

Beaver
By gnawing down trees and building dams, beavers open up the woodland around them. Beaver dams flood the local area, creating complex wetland habitats.

Kingfisher
Streams with overhanging branches make for ideal perches for kingfishers to hunt for prey.

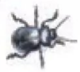






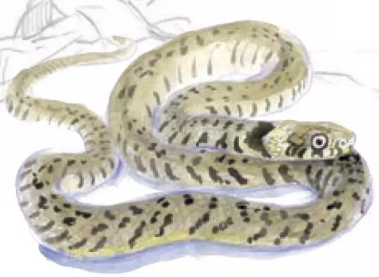
Wood mouse
Mice are a valuable source of food for predators of all shapes and sizes.

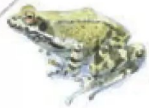
Bloody-nosed beetle
Stag beetles are important for recycling and breaking down dead wood.



Grass snake
Grass snakes are often found near water. They feed on amphibians, fish, small mammals and birds. About 150 million years ago, snakes roamed about on legs as lizards. They have evolved a slithering motion and act as both predator and prey.

Common frog
Frogs have powerful hind legs that allow them to leap out of harm's way.



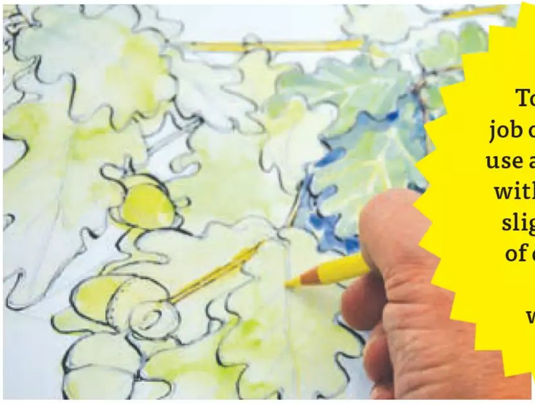


Tutorial: *Oak Sprig*

Use this tutorial to learn to capture the lovely undulating form of the waxy oak leaf, the roundness of the acorns and mix the deep warm green shade of their leaves in this step-by-step tutorial. One of the objectives of this exercise is to create overlapping lines that enable the viewer to see that one leaf is in front of the other.

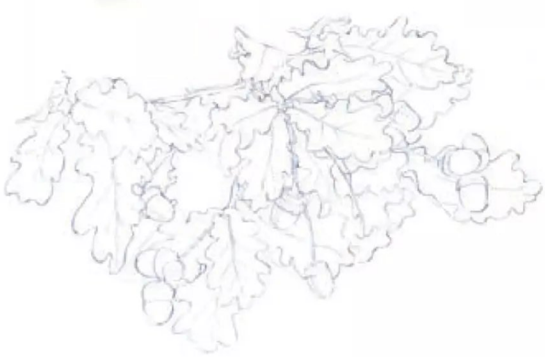
TIP

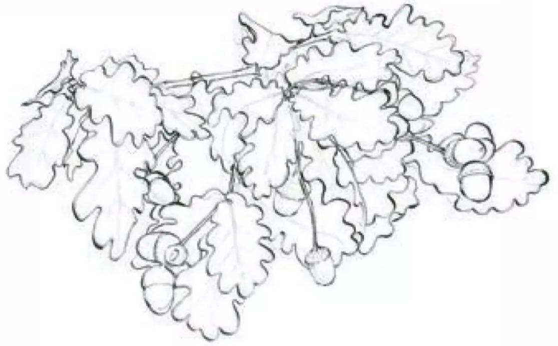
For best results, work on a thick, smooth cartridge paper 220gsm, stretched to prevent buckling



TIP

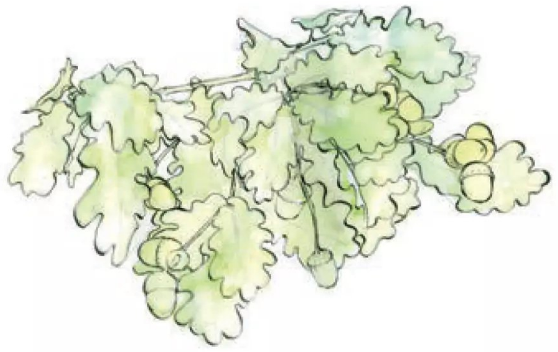
To help with the fiddly job of capturing thin veins, use a waxy colouring pencil with a sharp tip to create a slight wax resist. A wash of dark green leaf colour can then be gently worked towards this impression.

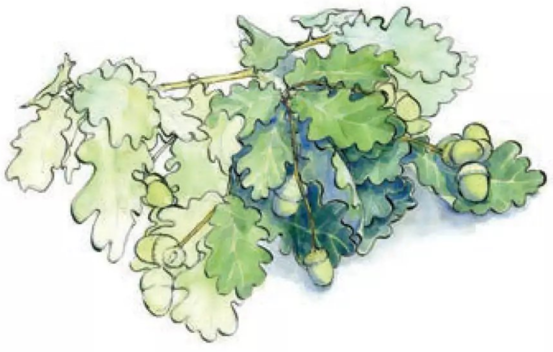




1 Place your sprig in front of you on a table and sit close to your subject. Focus your eye on a starting point, a single leaf, and let your drawing grow from leaf to leaf as you navigate your way across the foliage using both positive and negative shapes. Capture the characteristic dog-eared shapes of the leaves with flowing arabesque lines. Try to simplify the intricate detail into the main leaf and twig shapes. Envisage your twig in three levels. Sketch the top storey first, gradually working your way down through the layers using overlapping lines to create the impression that one leaf is in front of the other. Start roughing-out lightly to establish the main shapes and change the proportions before committing to darker lines. Overlapping lines create the convention that one leaf is in front of the other.

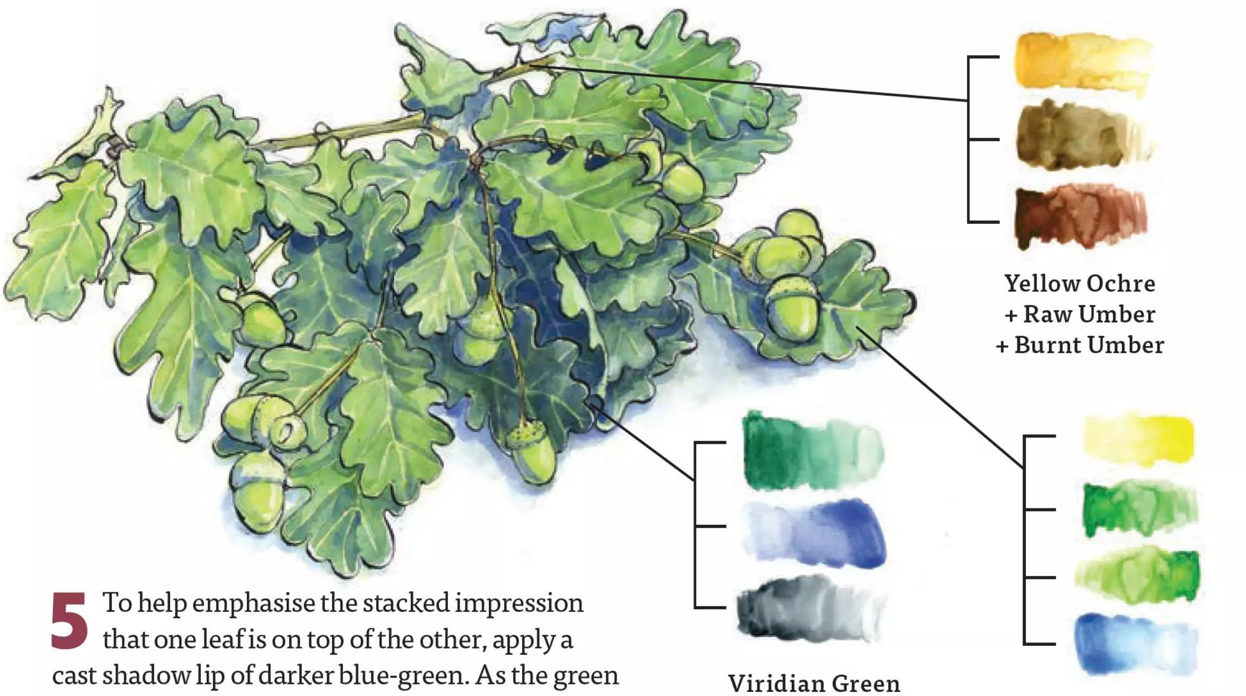
2 Redraw, still looking intently at the sprig; don't merely trace over the initial sketch. The light sketch acts as a loose armature for the more exacting ink line. Imagine the tip of your dip pen or pencil touching the contours of the oak leaves and take your line for a walk, like a bug, around the shapes, observing every nook and cranny. Capture the character of the forms with an accurate line that bites into the edge of the form. Notice imperfections, interesting broken bits and insect bite marks. Not all the lines you create are on the edge of the form; perhaps there are marks such as the central vein that runs the length of the leaf, and the branching veins can be delineated with a lighter pencil stroke. The exercise should be done slowly and with conviction. Vary the thickness of your line from thin to thick by varying the pressure.





3 Before you start to add watercolour, identify your light source and keep this consistent. The veins of my oak leaf and acorns are yellow-green; this is the lightest and brightest colour and the first that I put down on paper. I break off a leaf and place it by the palette to achieve an accurate mix. I begin lightly with watery transparent washes that stain the ink line drawing. The selection of colours I use is only a recommendation; experiment with your paintbox to discover your way of interpreting the colours. Modulate by graduating different shades wet-into-wet (see page 27) to reflect the way the colour varies across the sprig. Cooler colours will tend to recede, while warmer colours project forward.

4 Now you can paint in the body colour of the leaves. Try to mix a natural green body colour of the oak leaf. Experiment with different combinations. I create little colour daubs on a separate scrap of paper to test the colour match. I spend longer mixing the colour than applying. Keep modifying your mix until you feel confident that your shade captures the warm oak green. Most pure green pigments will need adapting to create an appropriate shade. The veins create a slight dip in the leaf, which makes a small shadow of form. Add a small quantity of French Ultramarine to the body colour of the leaf. French Ultramarine with a slight touch of Payne's Grey creates a cast shadow colour that stops the sprig from floating in space.



Yellow Ochre
+ Raw Umber
+ Burnt Umber

Viridian Green
+ French Ultramarine
+ Payne's Grey

Lemon Yellow
+ Hooker's Green
+ Sap Green
+ Cobalt Blue

5 To help emphasise the stacked impression that one leaf is on top of the other, apply a cast shadow lip of darker blue-green. As the green darkens in the shadows add an increased amount of French Ultramarine.

Study Sheet: *Woodland Insects*

There are some 950 thousand different kinds of living insects known in the world. They inhabit every single continent from the hot to the cold. If backboned animals disappeared overnight, the natural world would survive. However, it would be a different story if insects disappeared, so crucial is their role in providing the foundations on which ecosystems depend.

Insects act as pollinators, pollinating flowers to bring us nutritious fruit and vegetables. They tirelessly work behind the scenes, even while we sleep. They also provide food for birds, bats and small mammals. Importantly, insects replenish the soils, enabling plants to grow and keep pest numbers in check. Scavenger insects, such as the dung beetle, a waste disposer, clean up and protect us from disease.

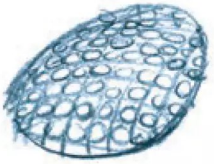
In all continents of the world, even Antarctica, insects have found a place and have evolved into a marvellous array of different appearances. Their quick reproduction lifespan means that adaptations have happened more quickly. Some of these are beyond the imagination, such as the dead leaf butterfly that has adapted fantastic camouflage and falling leaf behaviour to hide from predators.

The latest research shows that insects evolved simultaneously with the earliest plants on the land - about 480 million years ago – and took to the air some 80 million years later. They were one of the first animals on land, crawling up as sea arthropods (meaning 'jointed leg') from the sea when early plants such as horsetails and ferns created a habitat for insects to dwell within.

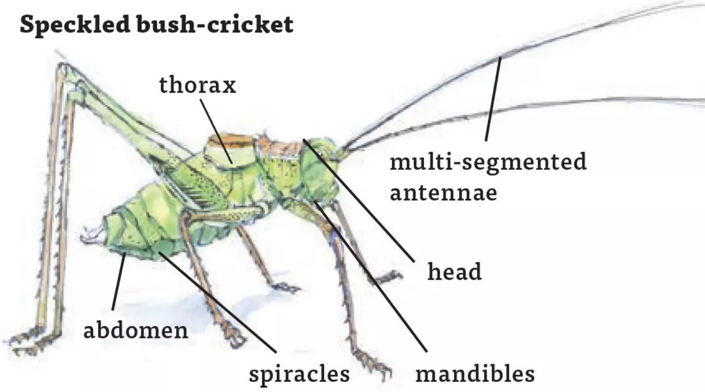
One of the best ways to draw insects is by breaking their body down into segments.

Compound eye

To imagine how a compound eye works, think of lots of little eyes on a dome shape. This hemispheric shape gives all-round vision, which is good at detecting motion and spotting a predator approaching, even from behind.



Speckled bush-cricket



Anatomy

Knowing a little about the anatomy can help you understand what you are looking at and inform your painting.

Head

This is where the antennae, compound eyes and mandibles attach. Some species also have a head horn for defence and impressive weapons.

Spiracles

Insects breathe through tiny holes along the side of the thorax and abdomen called spiracles.

Thorax

The thorax is full of muscles and is the central machine area for both walking and flight. Both the wings and the legs attach to it.

Abdomen

The abdomen retains the segmented division of its earlier worm-like ancestors and contains the heart, reproductive organs and digestive organs.

Claw

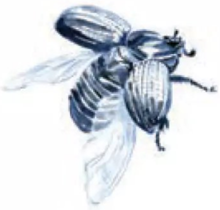
The claw is used for hooking and holding the light insect on a variety of surfaces. A water strider has a single hook with lots of hairs that helps it balance on the water.

Legs

All insects have six legs. While butterflies in the nymphalidae family may appear to have four legs, they do in fact have two tiny front legs tucked up so that you can't see them. The coxa joins the thorax, then the trochanter, femur, tibia, tarsus and claw. The proportions, shape and number of tarsus vary widely.

Exoskeleton

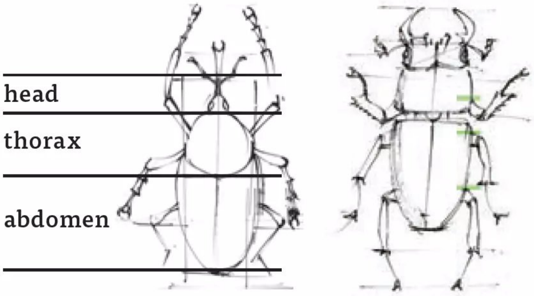
The exoskeleton is created from a strong substance called chitin and can be thought of as a suit of armour. As with the insect's ancestors, the sea arthropods, to grow means shedding the case. Some bugs, such as stag beetles, have really sharp angular planes, and it helps to keep your pencil sharp to describe the crystal-like structures. I enjoy attempting to emphasise the shininess by leaving white gaps and allowing the watercolour to bleed. There are always interesting alien shapes and components coming from a seemingly other world.



Elytra

The elytra are the beetle's modified, hardened forewings, which serve as a protective wing-case for the gossamer hindwings underneath.

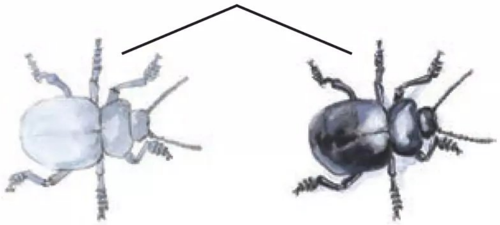
A view from above

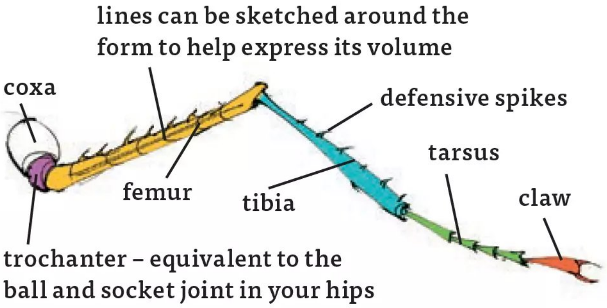

head
thorax
abdomen

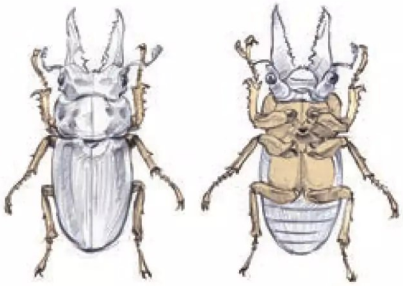
Front legs tend to face forward. A light directional armature can be sketched before fleshing out and adding thickness to the leg.

Use light horizontal lines to judge the length of the legs. Ensure they line up on either side of the body. Note from beneath which body part they emerge.

Build up the paint in stages from light to dark



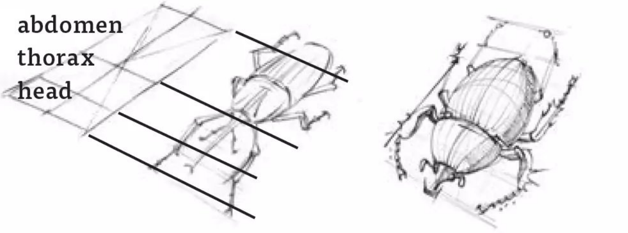

lines can be sketched around the form to help express its volume
coxa
defensive spikes
tarsus
femur
tibia
claw
trochanter – equivalent to the ball and socket joint in your hips



Insect archetype leg

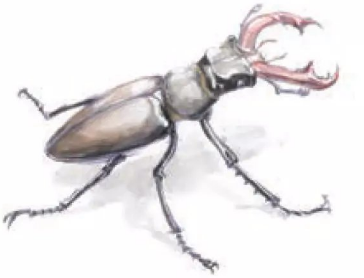
The back legs can appear to join the abdomen. However, this is misleading as the thorax tends to be longer on the underside of the insect.

A dynamic viewpoint


abdomen
thorax
head

Directional shading sculpts the form.

Use sharp concave marks to create defensive spikes. Count the number of tarsus.



Stag beetle

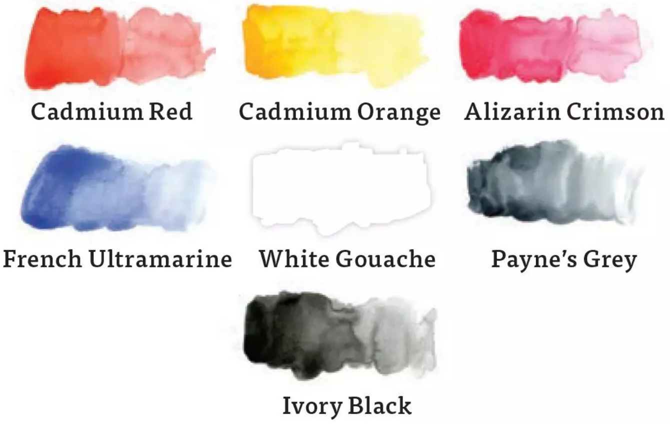
When sketching insects, try to create the impression that the thin tubes of the chitin legs are supporting the weight of the body.

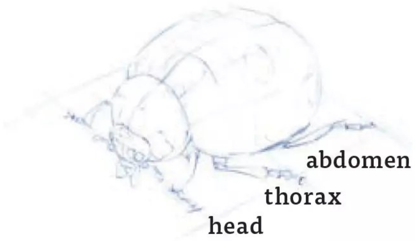
◂ **Bloody-nosed beetle**

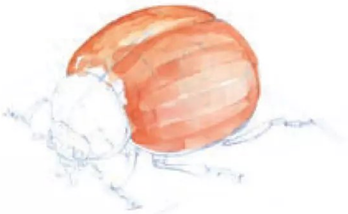
Capture the shiny carapace by leaving white patches of bare paper in carefully observed shapes. A light stipple at the edge of these patches captures the pitted texture found on some beetles.

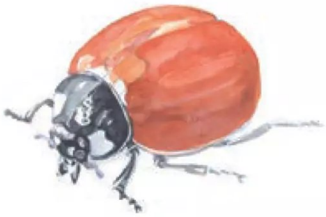
Tutorial: *Seven-Spot Ladybird*

The seven-spot ladybird is the UK's most recognisable species of ladybird. They are often found overwintering indoors or in dry, sheltered crevices such as beneath tree bark. As a voracious predator of aphids, they are an excellent natural pest controller. Painting these bulbous little bugs from a three-quarter view beneath the eyeline helps express the three-dimensional qualities of their form.







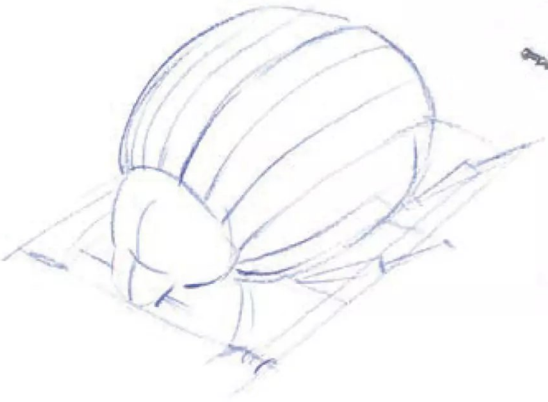


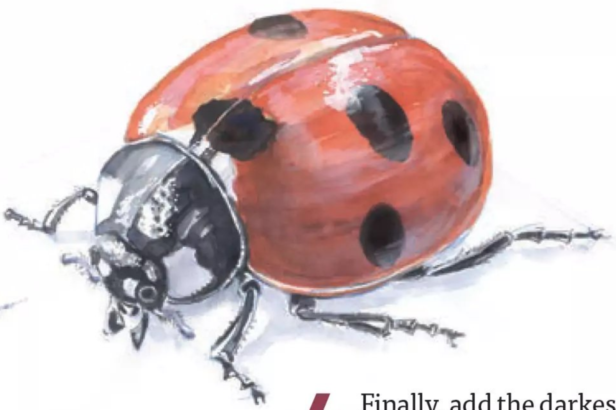
1 Sketch the body's three main segments and the bilateral line of symmetry. Note where the legs emerge from beneath the body. Name the leg segments in your mind as you draw them and count the number of tarsus. Create light, round lines around the abdomen to start coaxing the form from the paper.

2 In the light, the ladybird's elytra become more orange; in the shade it takes on a cooler tone. Use Cadmium Red as the base and graduate by adding Cadmium Orange and Alizarin Crimson. Notice the light ridges and paint around the form.

3 Now increase the mid-tones, placing the white eye patch and nearside elytra in the shade by using French Ultramarine in the mix. The head, legs and distinctive black spots are created with a pure Ivory Black in various diluted washes.

Ladybird widget

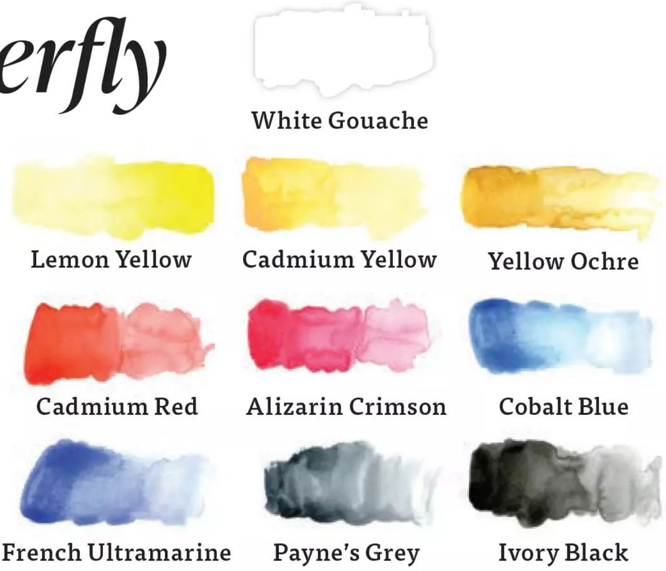


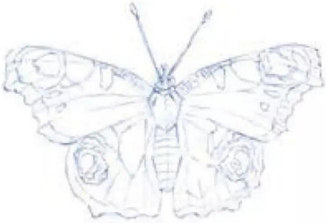


4 Finally, add the darkest values and highlights with White Gouache. The drop shadow is created by a mixture of French Ultramarine and Payne's Grey.

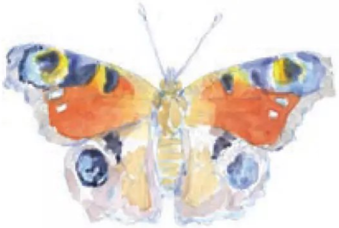
Tutorial: *Butterfly*

Butterflies are a beautiful and essential part of wildlife. They are highly sensitive indicators of the environment's health, play crucial roles in the food chain and are pollinators. The iridescent colour of the wings is not created by pigment alone; the nanostructure of the chitin, or wing scale, affects how light is reflected, creating brilliant colours that can only be captured in watercolour by keeping your water clean and pigments bright.

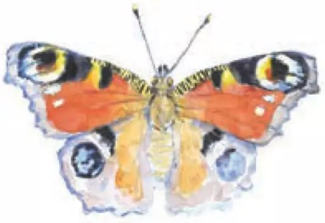

White Gouache
Lemon Yellow
Cadmium Yellow
Yellow Ochre
Cadmium Red
Alizarin Crimson
Cobalt Blue
French Ultramarine
Payne's Grey
Ivory Black



1 In your initial sketch, try to get down all the information you want to show through the translucent washes of watercolour. Indicate the discal cells and the branches you can see, as well as outlining the markings. Note that the lower wings are beneath the upper wings.

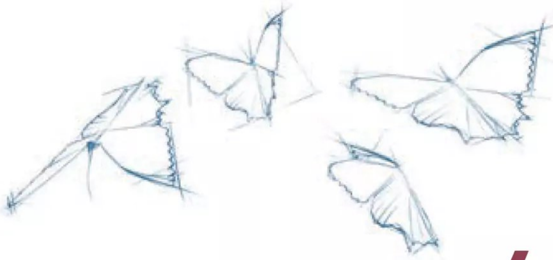


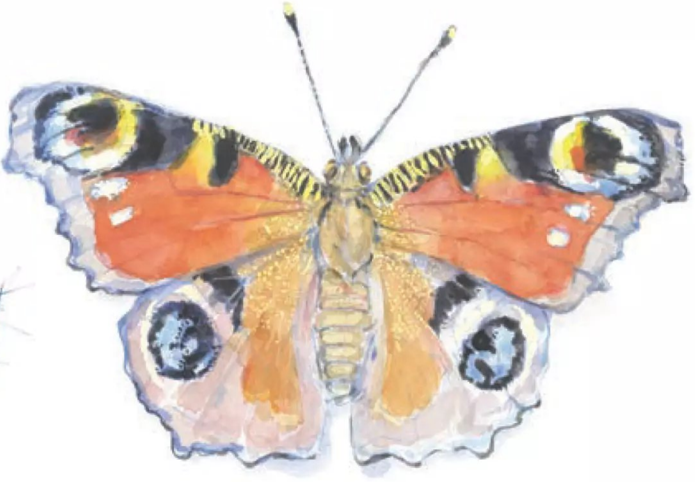
2 Now, paint in the lightest and brightest colours. Use wet into wet techniques and graduate your washes, letting one colour bloom into another.



3 Work broadly, then work towards the detail, using smaller and smaller brushes until you start speckling in fine dots with a rigger brush, using a mixture of White Gouache and Lemon Yellow.

Butterflies in flight gizmo





4 Add a drop shadow beneath the top wing to emphasise that they are in front and use a watercolour pencil to highlight the branches and create the texture of fine hairs on the thorax.

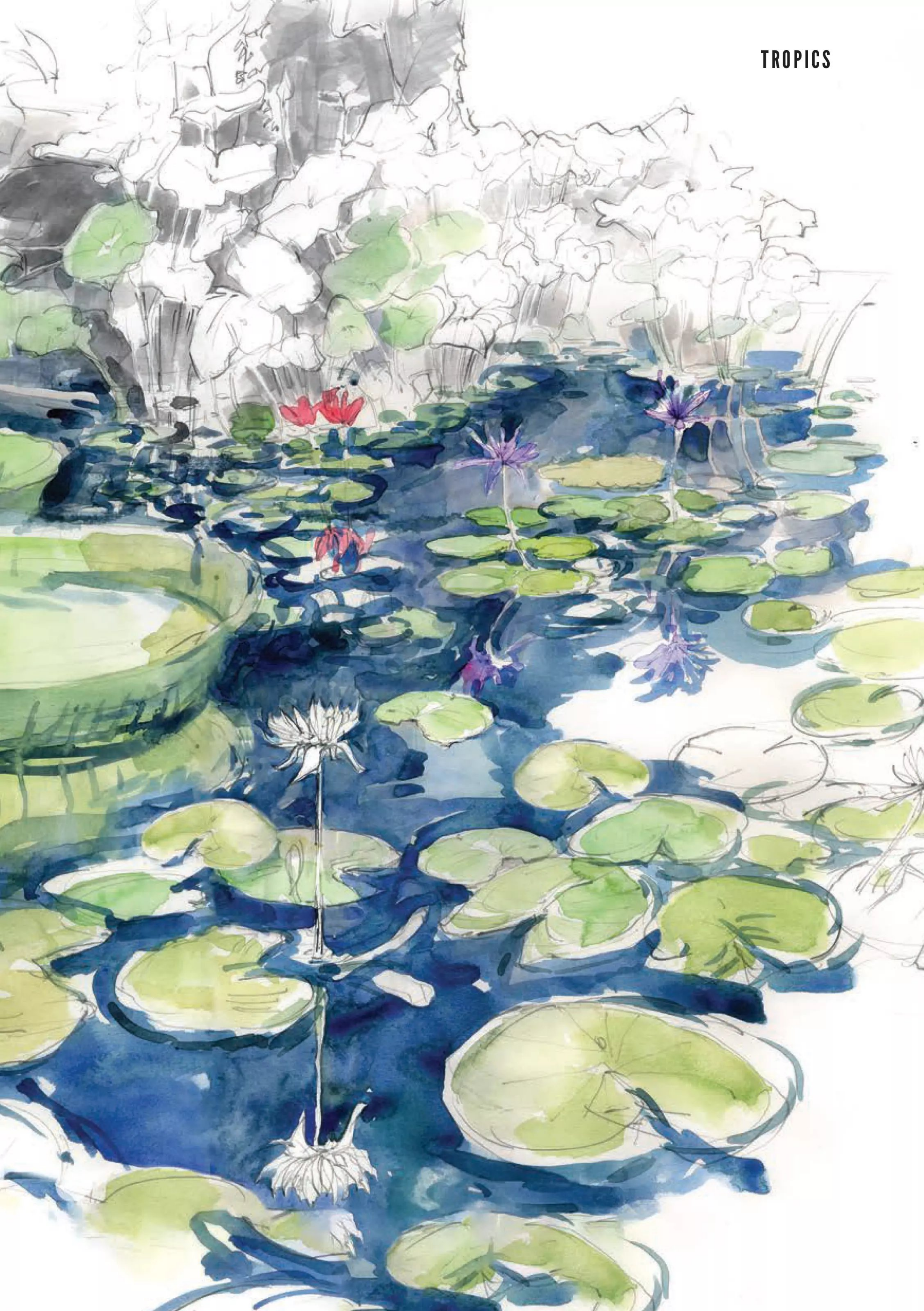
Tropics and subtropics

The Earth’s hottest areas lie on the equator, creating some of the most precious wildlife habitats that teem with every class of animal. Here, plants flourish in the tropical, damp climate, creating a habitat for multi-coloured birds, while the warm waters abound with exotic fish.

The tropical zone is the area around the middle of the Earth, forming a belt between the tropics of Cancer and Capricorn, approximately at latitudes 23 N and S respectively. In this zone, the sun passes directly overhead throughout the year, with little seasonal change. Tropical climates have monthly average temperatures of 64°F (18°C) or higher year-round and have high levels of precipitation.

The subtropics are the region for about 10 degrees latitude N and S of the tropical zone. Here the sun is never directly overhead but summer days are longer, so weather can be even hotter. Significant portions of the world’s sandy deserts are to be discovered in the subtropics.

The tropics are notable for their rainforests, which cover only six percent of the world’s surface but make up 50 percent of species and play a vital role in sustaining life on Earth. Large leaves allow tropical plants to capture more sunlight energy, and a ready supply of water can convert this energy into food for growth. It is a race to the light between the plants, relying on capturing unpredictable shafts of sunlight, known as sunflecks, breaking through the canopy. Very little light falls on the forest floor, so plants here have vast leaves to capture as much sunlight as possible. Many plants have waxy leaves that help repel the rain.



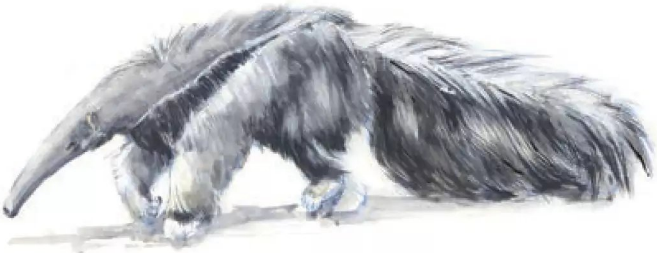
Tropical rainforests

Rainforests are essential for the Earth; they remove carbon from the atmosphere and produce oxygen. But due to deforestation, they're disappearing faster than anywhere else on the planet. They are wonderful and unique habitats that are a cradle of biodiversity and are vital to preserve.

Life in tropical rainforests exists in abundance. Despite covering less than six percent of the Earth's surface, it is home to half of all the animals and plants on land. Its richness in water, light and nutrients creates a recipe for a spellbinding ecology of diversity.

The plants here have evolved into spectacular lush vegetation with large leaves to harvest the sun's energy in the race for light where only two percent of the sun's rays reach the ground.

Up to 90 percent of the animals spend their lives up in the trees and have adaptations to enable them to move around. Animals such as the spider monkey have evolved specialist limbs, hands and even a prehensile tail to swing through the trees. They thrive in a complex three-dimensional environment with these adaptations that allow them to climb and survive, for their lifestyle depends on their ability to climb.



Giant anteater
The giant anteater is found in multiple habitats, including grassland and rainforest. It has no teeth; instead, it has a long sticky tongue to eat up to 30,000 ants a day. It walks on the knuckles of its front feet so that its claws stay sharp.

Multi-storey ecosystems

All woodlands and forests can be considered multi-storey ecosystems with a variety of different living spaces. These are niche environments to which animals have adapted, from crocodilians in the rivers to golden lion tamarins running along the intricate lattice of branches overhead.

They can be broken down into four essential storeys. While most animals tend to stay in their preferred storey, some venture between the different layers. Here, to illustrate the various niches that animals have adapted to, I have selected several species from rainforests around the world; for example, the role of the tiger as an apex predator in Asia is taken up by a jaguar in the Amazon.

The emergent

Rising above the canopy, where the tallest trees protrude, is the zone called the emergent. This averages in staggering heights of some 245ft (75m). These tree giants provide nesting sites for predatory birds and roosts for bats. There is little protection or shade to be found, and it is generally very sunny.

The canopy

The canopy also refers to the upper layer or habitat zone formed by mature tree crowns. This zone is the home for flying and climbing animals such as birds, monkeys and butterflies. During the day, the canopy is drier and hotter than other parts of the forest. The foliage is dense, making it difficult to see, so many canopy animals rely on loud calls or lyrical songs for communication. Gaps between trees mean that some canopy animals fly, glide, swing or jump spectacularly to move about in the treetops.

The understorey

The understorey, beneath the canopy, is an additional layer of growth primarily made up of vines, palms and ferns. It is a sheltered area beneath the dense roof of leaves. Raindrops seem to continually drip through, and rays of light pass through the smaller trees and large-leaf shrubs.

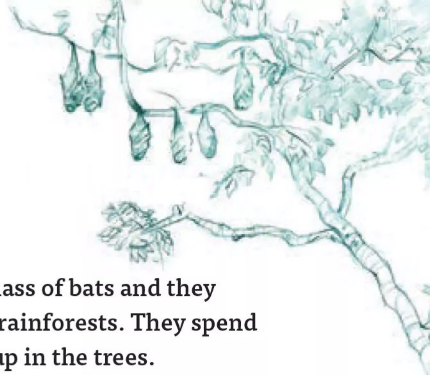
Light levels

emergents

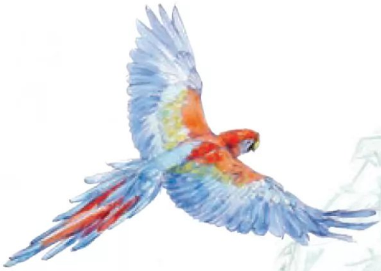
canopy

understorey

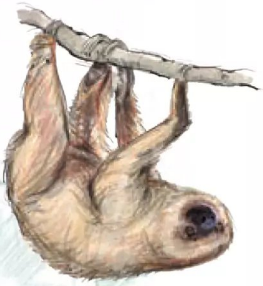
forest floor



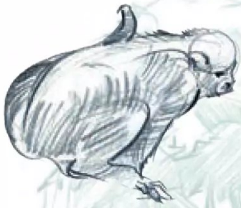
Fruit bat
These are the largest class of bats and they inhabit all the world's rainforests. They spend the day sleeping high up in the trees.



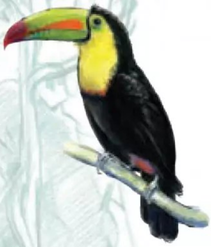
Scarlet macaw
These birds live high up in the emergents and canopy. They feed on jungle fruits and nuts with mighty nut-cracking beaks. Their scaly tongues are dry and contain bone, which is most frequently used for pulling the nut from its kernel. These are social birds, usually seen travelling in flocks in sizes of 10 to 30.

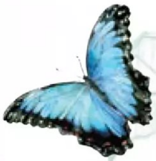


Sloth
Sloths live high up in the trees in the American rainforests, spending most of their time curled up. Their hands and feet have evolved into hooked claws from which they suspend themselves beneath the branches to live life upside down. They are the only mammal to appear green; this camouflaged colour is created by algae that grow in its fur.



Black-capped squirrel monkey
Rarely going to ground level, black-capped squirrel monkeys spend most of their time in the middle-to-high canopy layer.

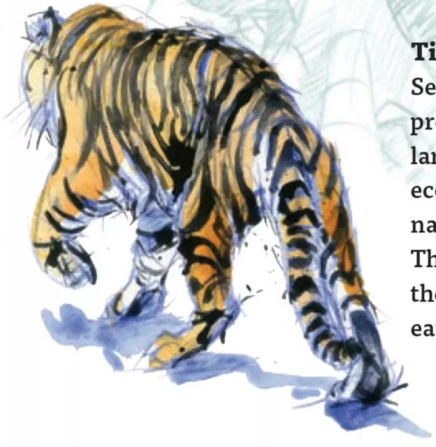




Blue morpho butterfly
A blue morpho butterfly uses an iridescent blue to find a mate in the dense jungle.

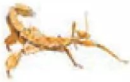
Soil
Rotting foliage breaks down into nutrients and minerals to revitalise the soil to support abundant plant growth. The earth is the home to such animals as worms and herbivorous rodents who live in burrows.

Keel-billed toucan
The keel-billed toucan regulates its body temperature by emitting heat from its large beak during the day and using it as a hot water bottle beneath its wings at night in the canopy.



Tiger
Serving as apex predators, tigers are the largest carnivore in their ecosystem. They control natural prey populations. This, in turn, controls the amount of vegetation eaten by tiger prey.

Stick insect
Rainforests contain many insects that engage in mimicry, the art of disguise. Some look like living or dead leaves, even with splotches and leaf holes. Only the best disguise survives!

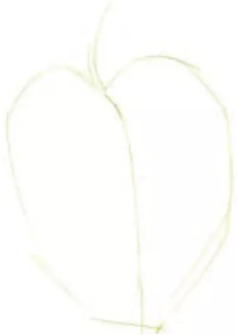


Tutorial: *Rainforest plants*

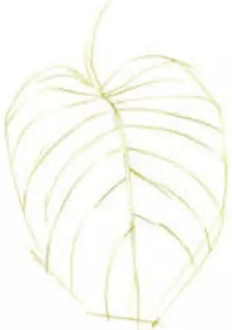
In the rainforest setting, the artist needs to be able to see through all the visual noise. Remember, you are creating an interpretation of what you are seeing; you are not a camera. Plant structures can be slightly forgiving in that the proportions can't be tested by the viewer. Pick a focal point as a starting point at the core of the plant's stem and let your drawing grow, working shape to shape, navigating your way to the outer branches and leaves.

ACTIVITY

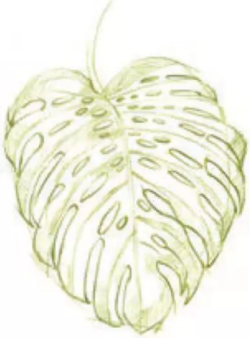
Travel with your sketchbook to the depths of the rainforest by visiting your local botanical gardens and enter the Palm House, where the air is heavy, hot and humid, and the lush vegetation has grown to giant proportions.



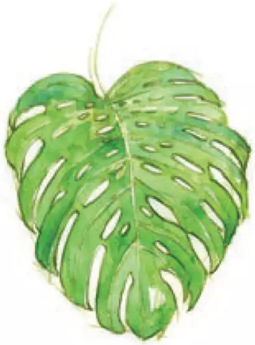
1 Start lightly capturing the leaf shape and midvein.



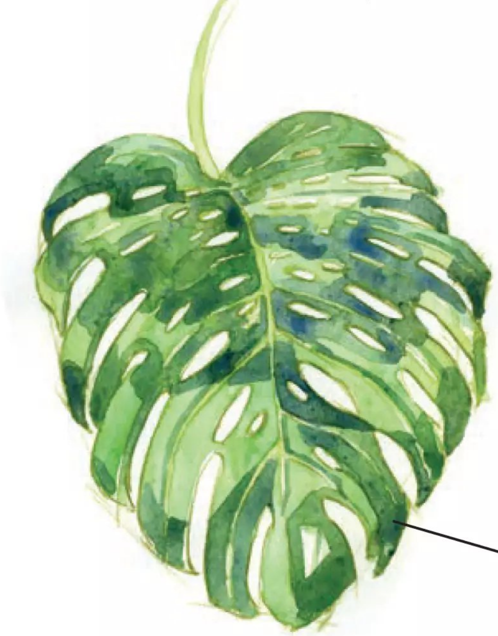
2 Put in the branching veins. The veins nearer to you should be wider.



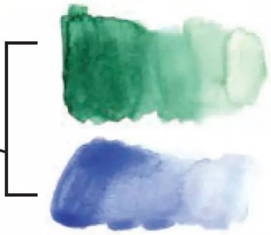
3 Now draw the serrations or dog-eared shapes and the elliptical holes.



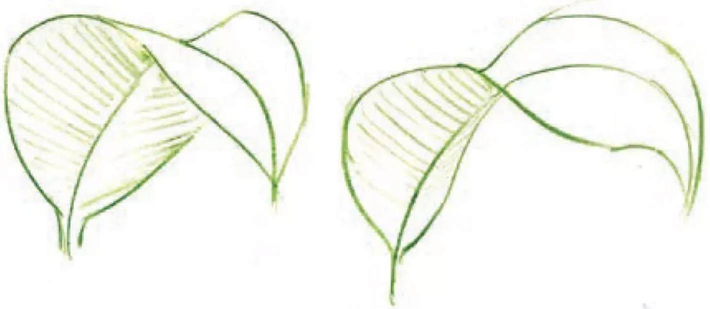
4 Paint a base coat of the lightest and brightest shade of green.



5 Finally, paint in the cast shadow colour, which is both bluer and darker.

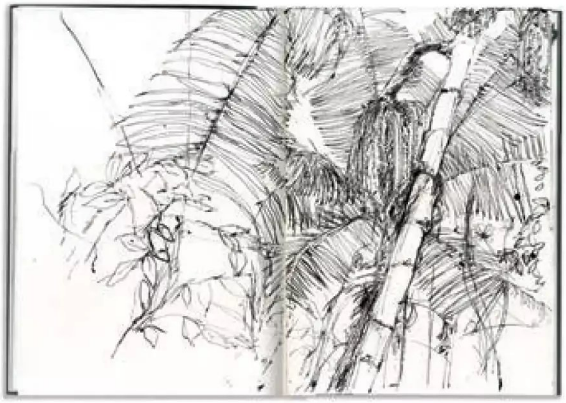


Viridian green
+ French
Ultramarine

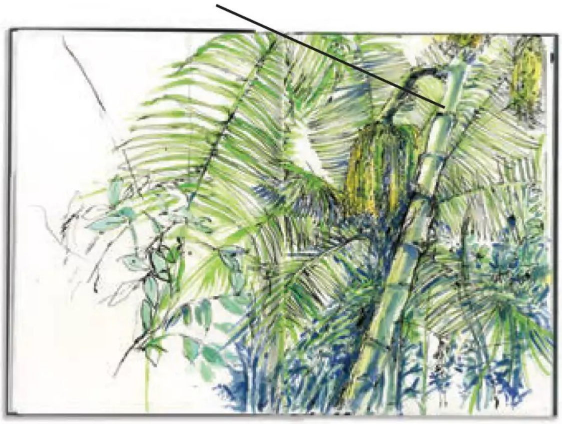


Foreshortened leaves
Explore creating curling and foreshortened leaves. Think of each leaf as a flat elastic shape that can bend and wave in the wind. Pick up a single leaf and rotate it in front of your eyes. Try to capture the side and compressed view. Observe how the midline moves smoothly from the underside view to the topside.

Capturing a jungle scene



Leave a light edge where the trunk picks up reflected light.



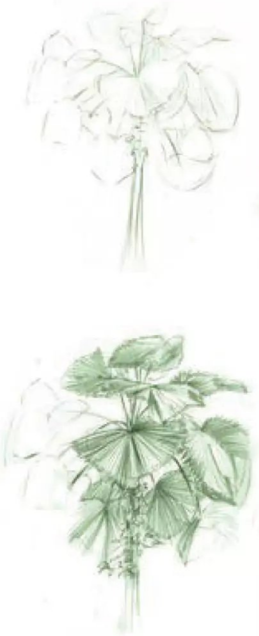
1 Working with a dip pen and ink, create a linear sketch, making marks that reflect the different textures.

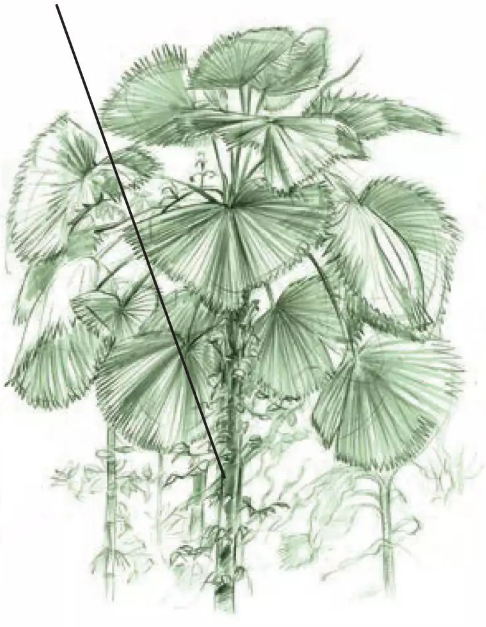
2 When the ink is fully dry, wash in the exotic greens, light to dark.

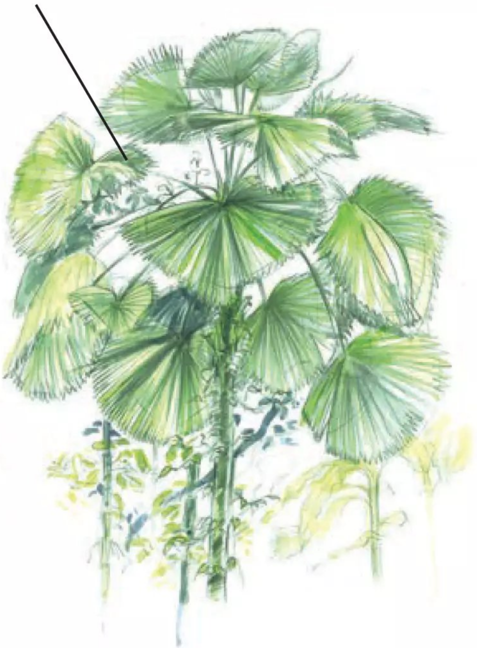
Fan palm

Bulk out in clumps, as areas of light and shade. The underside is typically in shadow.

Look for leaves in the light and those in silhouette and the interplay between the two.



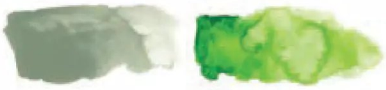




1 Begin by creating very light construction lines. Try to establish the main shapes and proportions. I envisage the trunk as a central pole with radiating branches.

2 With a thin brush No 2 and Terre Verte, create a light underpainting with swift strokes, capturing the crinkles in the leaves, regularly swapping between the brush and pencil.

3 Once the underpainting is dry, add a splash of Sap Green, painting along the leaf crinkles.



Terre Verte

Sap Grteen

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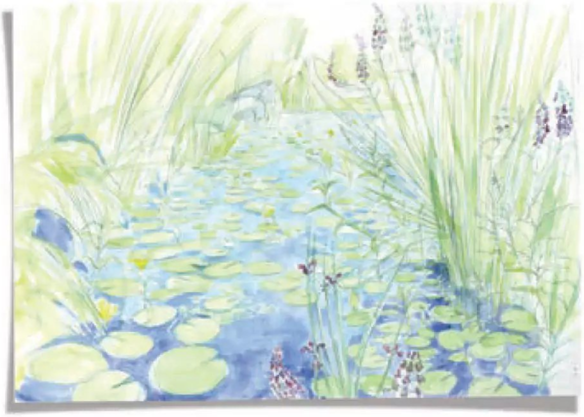
Estuaries and Wetlands

Wetland habitats perform essential tasks in an ecosystem, such as filtering water, preventing flooding and erosion and providing food and shelter for fish and wildlife. The unique flora of aquatic plants is the key component that separates wetlands from terrestrial land formations or fully submersible water bodies. Except for Antarctica, wetland ecosystems can be found on every continent. Wetlands contain freshwater, brackish water or even saltwater as with mangrove swamps.

Wetlands

Wetlands are found worldwide, ranging from giant deltas, mighty estuaries and mudflats to floodplains and peat bogs. Others are as humble as a marshy bog or garden pond. All play a crucial role in protecting the health of our planet and serve as a lifeline for freshwater species.

Wetlands are one of the world's most biodiverse habitats. The London Wetland Centre, where I created these sketches, is home to lots of endangered species and acts as vital 'service stations' for millions of migratory birds to rest and refuel. Many endemic species are found only in specific wetland areas.

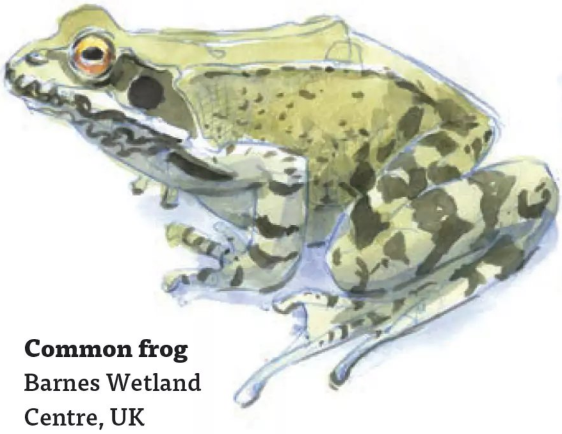


Pond
London Wetland Centre, UK

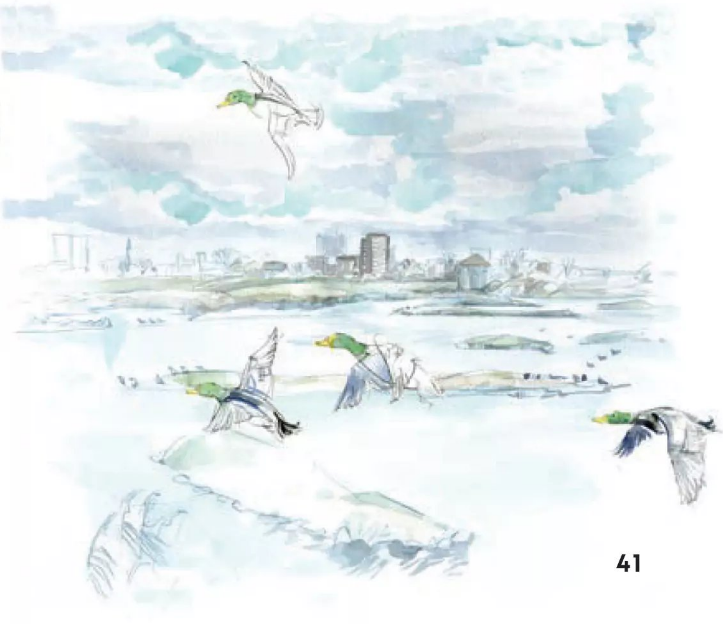
Estuaries

An estuary is a partially enclosed coastal body of brackish water with one or more rivers or streams flowing into it and connecting to the open sea. Estuaries form a transition zone between freshwater and maritime environments and create a rich habitat for a diverse range of species, with many more than the eye initially sees.

There is much life going on beneath the mud in the form of tiny shellfish and worms, making estuaries popular with birds and an airport for migrating wildfowl. They are great places for sketching birds, and many have hides you can paint from, looking through a pair of binoculars for a closer view.



Common frog
Barnes Wetland
Centre, UK



Splashdown
London Wetland
Centre, UK

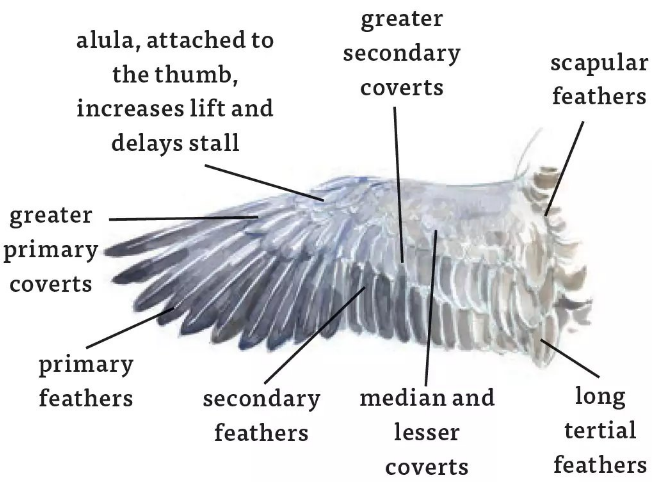
Study Sheet: *Goose*

Geese are divided into two main groups: the 'grey' geese (which can be confusing as it includes white or brown species) with around seven species and the 'black' geese, with around six to eight species. The black geese derive their name from the prominent black colouration areas, sometimes around the neck, like a Canada goose.

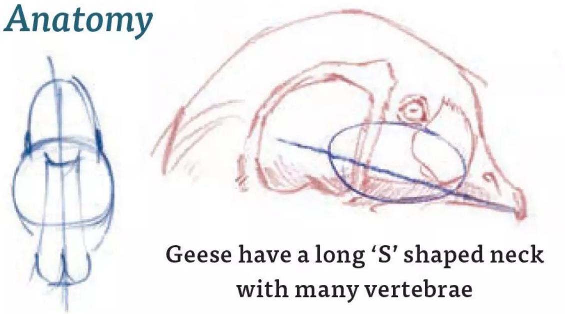
In general, most geese are gregarious birds that form flocks during migration and outside of the breeding season. When they are together, they can cause quite a commotion with their honking calls, hence their collective noun 'a gaggle of geese.' When geese migrate, they often fly in a tight 'V' formation; this is known as a wedge, as it looks like a wedge that you'd put under a door to keep it open. Flying in V formation is more efficient for the geese when they are travelling thousands of miles. The goose in front creates an updraft current of air from the downbeat of its wings, which the goose behind it flaps its wings on to create a more significant lift. A male goose is a gander, and a female goose is sometimes referred to as a dame. Baby geese are called goslings.

Scapular feathers

The front part of the folded wing is entirely hidden by scapular feathers that cover the top of the wing when the bird is at rest. They cover the bend of the wing and blend it with the body.


alula, attached to the thumb, increases lift and delays stall
greater secondary coverts
scapular feathers
greater primary coverts
primary feathers
secondary feathers
median and lesser coverts
long tertial feathers

Anatomy



Geese have a long 'S' shaped neck with many vertebrae

Head and neck

Ducks have a very pronounced cheek. It is less so on geese. I tend to sit the eye on an eclipse and intersect this with a line for the beak.

Feathers

Feathers evolved from scales. Now all flying birds share a similar body plan with a variety of exaggerations. Understanding the groups of feathers will help you create accurate bird sketches.

Primary feathers

Primary flight feathers are rigid and provide thrust. These feathers are asymmetrical, with the leading edge of the blade being narrower to aid lift. The vanes of all flight feathers have tiny hooks called barbules that zip together, giving the feathers the strength needed to form an airfoil.

Secondary feathers

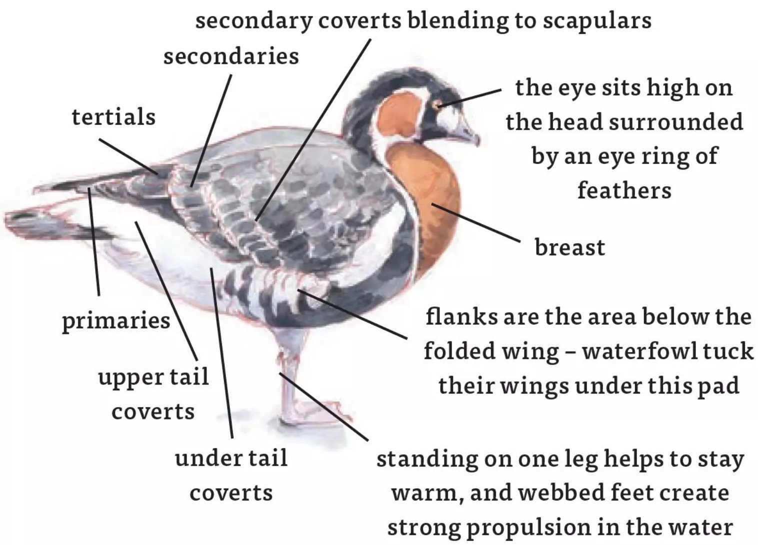
Secondary flight feathers are shaped to aid gliding. The number of secondaries is highly variable among all birds (typically nine to 12, although some, such as albatrosses, have as many as 32) and are related to wing length.

Tertial feathers

The innermost flight feathers of the wing. There are usually three to four tertials. On geese, these are large.

Coverts

Wing coverts are softer than flight feathers and create a smooth surface for the air to flow over the wing.


secondary coverts blending to scapulars
secondaries
tertials
the eye sits high on the head surrounded by an eye ring of feathers
breast
primaries
flanks are the area below the folded wing – waterfowl tuck their wings under this pad
upper tail coverts
under tail coverts
standing on one leg helps to stay warm, and webbed feet create strong propulsion in the water

Contour feathers

The contour feathers of a bird are the outer feathers – the ones that you can see. They provide the colour and the shape of the bird. The contour feathers tend to overlap each other, much like tiles on a roof. The feathers tend to shed rain, keeping the body dry and well insulated. The contour feathers used for flight are known as remiges and the tail feathers rectrices.

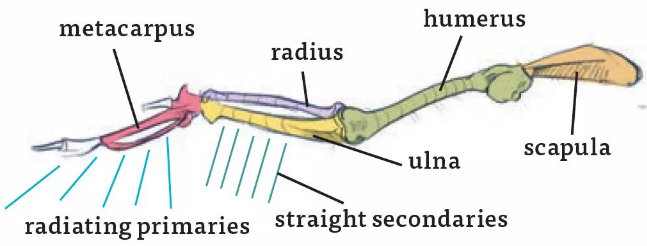
Tail flight feathers

The tail flight feathers are used as a rudder in the water and in the air, steer, balance and act as a brake for landing.

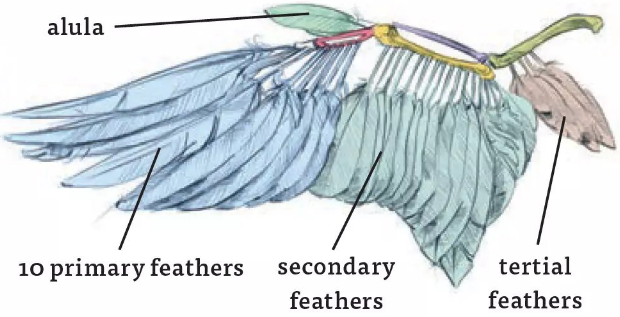
Bones of the wing

Primaries are the outer wing feathers attached to the bird's small, fused 'hand' bones. Notice that they radiate whereas secondaries run perpendicular to the bone. The tertial feathers are attached to the humerus bone in the bird's upper arm.

Straight wing


metacarpus
radius
humerus
ulna
scapula
radiating primaries
straight secondaries

Underside view


alula
10 primary feathers
secondary feathers
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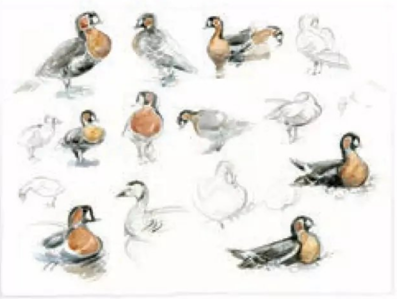
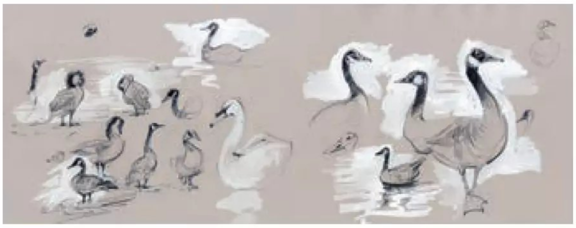


Red-breasted geese study sheet

Sitting on a sketching stool on a sunny afternoon, I began this study sheet with light looping lines. I leave my paintbox on the grass and lean over to mix and load the brush with paint after I have created an initial sketch for guidance. I try to let my understanding of feather tracks show through. I find the line of secondaries a helpful reference point and paint from beak to tail, going from one colour patch to another.



Canada geese on mid-tone paper

Geese are not timid animals and allow you to get quite close. Sunlight danced brilliantly behind the Canada geese, placing them in a halftone silhouette. I allowed the mid-tone of the pastel paper to do the work for me and used White Gouache to create a striking silhouette. I tried to capture whatever they were up to, from meticulous preening of their waterproof feathers with preen oil to courtship displays.

Study Sheet: *Giant Tortoise*

In the absence of mammal competitors for plant food, several kinds of giant tortoises evolved on the Seychelles, Mascarene and Galápagos islands. 'Galápago' is an old Spanish word for tortoise. When sailors first made it to the Galápagos in the seventeenth century, there were hundreds of thousands of tortoises of around 15 different species, hence the naming of the island after them.

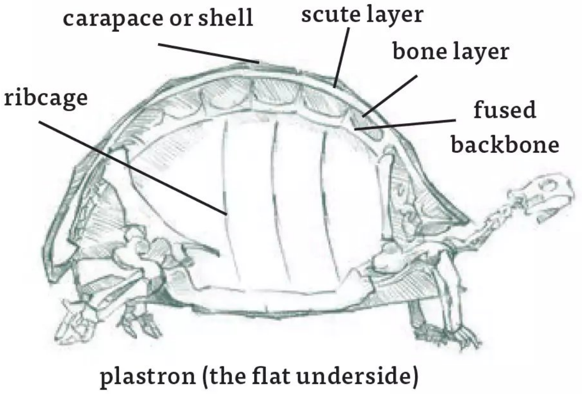
The variety of shapes and sizes of the tortoises' shells helped Charles Darwin, who reached the islands in 1835 aged 22, to solve the riddle of evolution. Each island had a slightly different climate. Darwin noted that tortoises on the more arid islands were smaller with a saddleback shell and a longer neck to reach the nutritious leaves overhead.

Scientists speculate that the giant Galápagos tortoises became established after a breeding pair made a long-distance swim, or floated on vegetation such as a fallen tree, from South America to the islands around two million years ago. The 13 extant species found on the Galápagos islands can be divided into two loose categories: the largest, with big, round shells are called 'domes'; the smaller tortoises which have shells that curl up in front like a saddle are called 'saddle-backs.'

Sadly, the sailors discovered that the tortoises made a tasty meal; so much so, the reason that the giant tortoise wasn't correctly classified by scientists for so long appears to be because they were delicious and no specimens ever made it back to Europe without being eaten on the voyage.

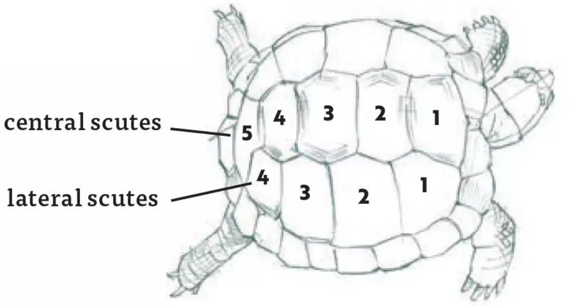
Anatomy

Knowing a little about the anatomy can help you understand what you are looking at and inform your painting.



The shell

Tortoises and turtles are unique in the animal kingdom in having a sort of mobile home created of fused scutes, which are bony, rigid plates. Scutes, which provide protection from predators, are also found on reptiles such as crocodiles and on birds' feet. But tortoises and turtles have gone one stage further – their ribs have widened and fused together to create a bulged shell.



The keel

The keel is made up of central scutes, which commonly amount to five in a single row. However, this can vary in other species and there can be more than a single row.

Claws

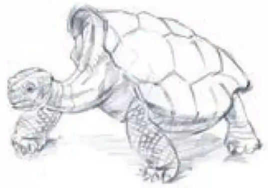
Depending on the species, a tortoise can have between three and five claws on each foot.

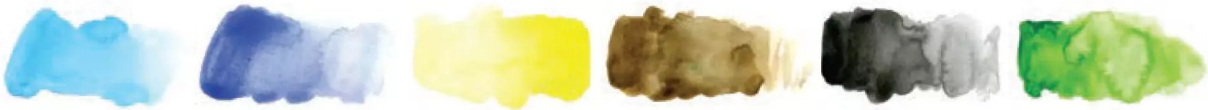
Beak

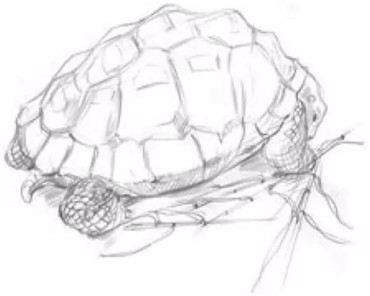
Tortoises don't have teeth but a horny beak to snip off vegetation.

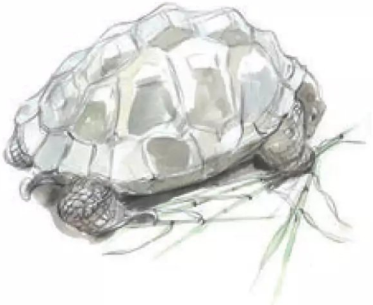
Front arms

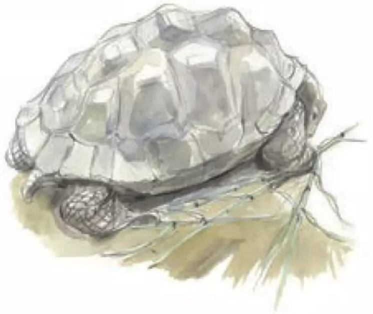
The front arms are noticeably longer than the back arms so that they can rear up.











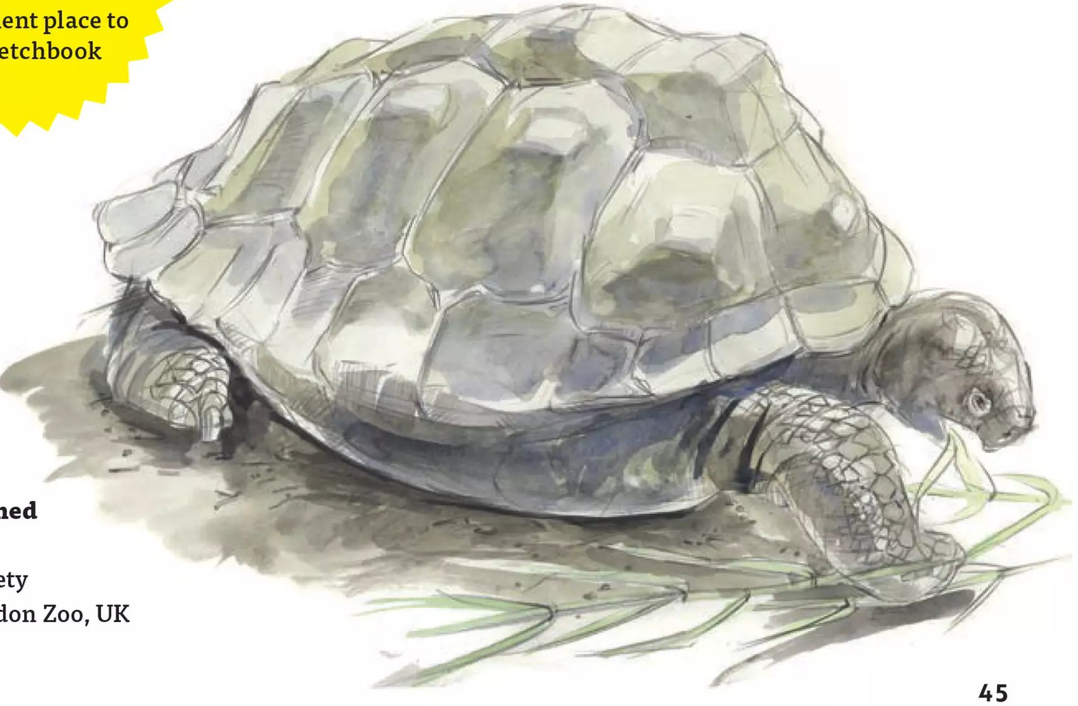
1 The slower pace of the tortoise means you can relax, take your time and get involved in an on-the-spot study. Sitting so close to the subject enabled me to really get into trying to suggest the pyramiding or raised peaks of the nobbly individual scutes.

2 Next, mix the paints to make the muted olives and smoky greys that camouflage the tortoise with the earth colours. The olive tinge was created with varying combinations of Cerulean Blue, French Ultramarine, Lemon Yellow, Raw Umber and Ivory Black. I included a plant to give a sense of scale, which I captured with a mixture of Lemon Yellow with Sap Green, and used Raw Umber for the dusty ground.

3 Finally, accentuate the light source and try to empathise the physicality of the sculptural bulk of the tortoise by developing the shading. Use a French Ultramarine degraded with Raw Umber and a touch of Ivory Black.

TIP

When I go sketching, I always take a lightweight stool with me as sometimes there is no convenient place to rest a sketchbook



Galápagos domed giant tortoise
Zoological Society of London, London Zoo, UK

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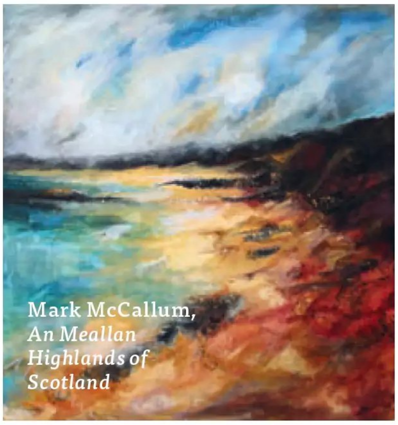
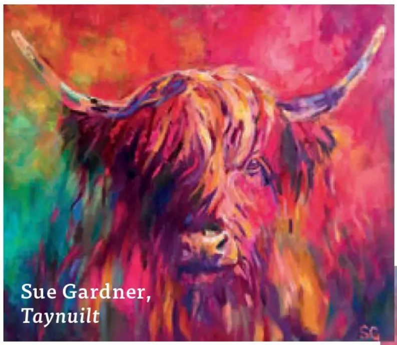
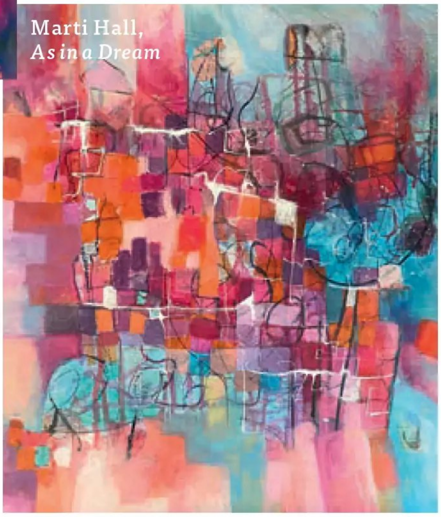


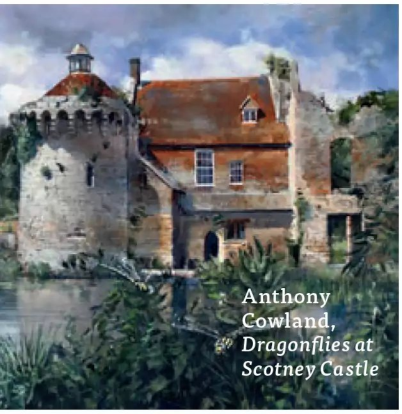
Mark McCallum, *An Meallan Highlands of Scotland*



Sue Gardner, *Taynuilt*



Marti Hall, *As in a Dream*



Anthony Cowland, *Dragonflies at Scotney Castle*

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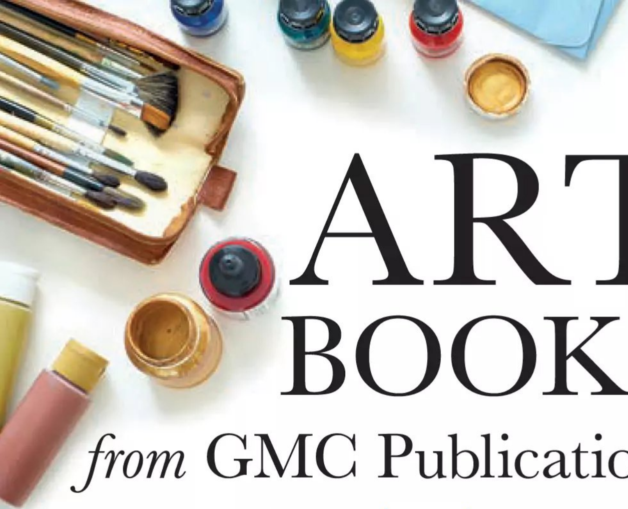

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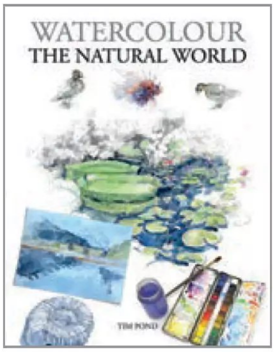
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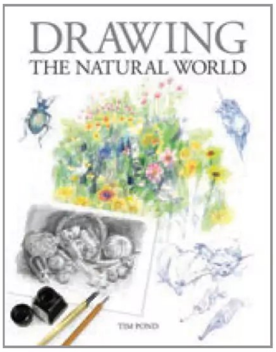
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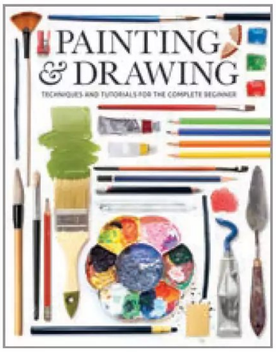
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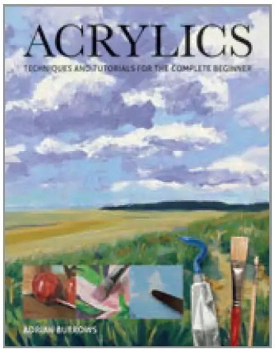
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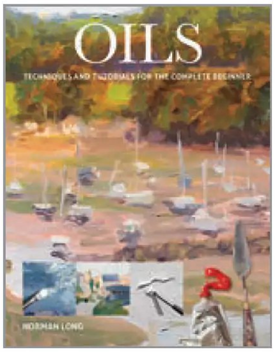
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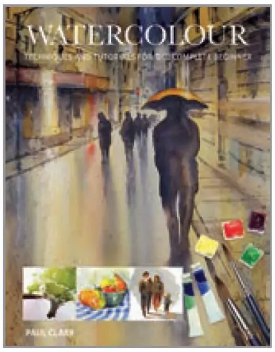
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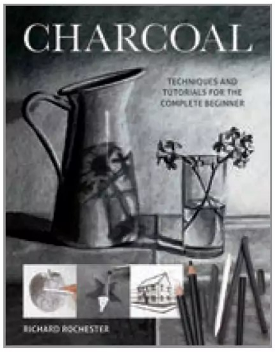
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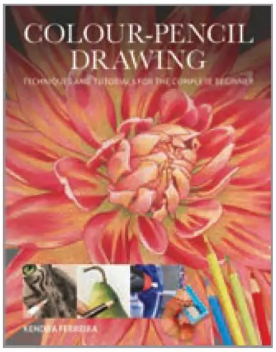
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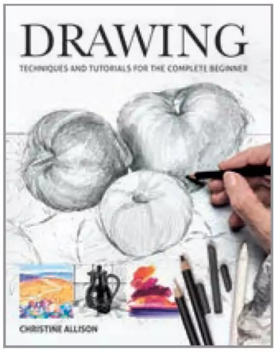
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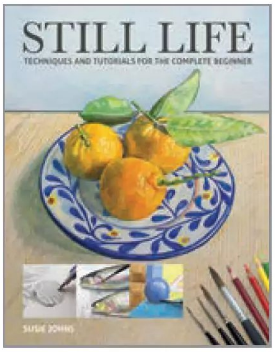
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